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National University of Ireland, Cork



A mixed methods study of the relationship between organisational readiness to change, service user engagement and innovation adoption in community-based opiate substitute treatment services in Ireland.

Thesis presented by:

Mr Peter Kelly, MSc, BSc (Hons), Dip Counselling, Dip H/Ed Mental Health Nursing

orcid.org/0000-0002-0505-8266

For the degree of:
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(Nursing Research)

University College Cork
Catherine McAuley School of Nursing and Midwifery

Head of School: Professor Josephine Hegarty, PhD, MSc, BSc, RNT, RGN

Supervisors:
Professor Josephine Hegarty, PhD, MSc, BSc, RNT, RGN
Dr Aine O Donovan, PhD, MSc, RPN
Expert Advisor:
Professor Kyle R Dyer, PhD, PGDip Psych Prac, BA(Hons),

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Glossary

CBT	Cognitive Behavioural Therapy
CI	Confidence Interval
CQC	Care Quality Commission
EBP	Evidence Based Practice
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
HIQA	Health Information and Quality Monitoring Authority
HIV	Human Immunodeficiency Virus
HRB	Health Research Board
HSE	Health Service Executive
NATP	National Addiction Training Programme
MI	Motivational Interviewing
NDRIC	National Drugs Rehabilitation Framework
NDS	National Drugs Strategy
OR	Odds Ratio
ORC	Organisational Readiness to Change
OST	Opiate Substitution Treatment
PRISMA	Preferred Reporting Items for Systematic Review and Meta-Analyses
RP	Relapse Prevention
SOF	Survey of Organisational Functioning
SD	Standard Deviation
QUADS	Quality in Drug and Alcohol Services
UCC	University College Cork
UK	United Kingdom
UNDOC	United Nations Office for Drugs and Crime
US	United States
WHO	World Health Organisation

Declaration

This is to declare that the content of this thesis is my own work and has not been submitted for another degree, either at University College Cork or elsewhere, where the work of others has been used to augment and argument it has been referenced accordingly. I have read and understood the regulations of University College Cork concerning plagiarism.

Peter Kelly	Peter Kelly	13th December 2021
Name	Signature	Date

80,921 [excluding tables and appendices]

Word Count

Dedication

To my wife Aoife and our children Tommy, Ellen and Anna, two of whom were born during the course of this study. Thank you for your love, tolerance and good humour when living with a husband and father who was often absent.

To my parents, who never had anything like the educational opportunities that have been provided for me, but who taught me the value of honesty, hard work, perseverance, and unconditional love.

To all the people that I have met who are dependent on drugs. The education and experiences that you have provided have been enriching and invaluable. Some of you are no longer with us, but the fight will go on in your memory.

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I would also like to thank the two expert advisors for this thesis, Professor Kyle Dyer from Kings College London, who helped to lay the foundations for this project and has provided sound advice and encouragement throughout, and Professor Joe Barry from Trinity College Dublin, now retired, who was instrumental in securing access to services in support of this project. Thank you also to Dr Vicki Livingstone who provided statistical support.

A big thank you to all the people who facilitated and participated in this study; service users and healthcare staff from whom there was no lack of enthusiasm to take part.

Last but not least, my wife, children, family and good friend's all of whom have shown me patience at some time or another and stood by my side throughout the PhD journey, and to my cycling buddies and the bicycle which helped me peddle at least some of the stress away!

Abstract

Introduction: While we know that treatment for opiate dependence, such as opiate substitution therapy and psychosocial interventions delivered in community settings are effective, we do not know exactly *why* they are effective. We do not know exactly what makes some services better than others at delivering treatment, and little is known about the attributes of services which can make them effective at improving service user outcomes or adopting new innovations. Organisational Readiness to Change (ORC) is a key concept from the field of organisational development and where it has been operationalised, it has helped to identify that some attributes of services within substance misuse treatment are important. ORC measurements have identified attributes of services which make some services more effective than others at adopting new innovations and delivering certain aspects of treatment such as service user engagement. No studies using ORC measures have been conducted in the context of Irish community treatment prescribing services and there is a dearth of qualitative studies which examine organisational aspects of addiction treatment services.

Aim: The overall aim of this study was to identify and describe aspects of community-based opiate substitute treatment services which were perceived to make them more effective at adapting to change, and delivering treatment for people who are dependent on opiates. This was done by describing and exploring the relationship between staff perceptions of ORC and its relationship with (i) staff perceptions of innovation adoption (ii) service user engagement with treatment and seeking to understand the mechanisms which underpin those relationships.

Method: The evidence base for this study was identified by conducting one systematic review (n=14 included studies) on the relationship between ORC and innovation adoption and one systematic review (n=8 included studies) on ORC and client outcomes in substance misuse

treatment services. A cross-sectional study using a mixed methods study design which accessed both staff and services users was then conducted. Two separate quantitative studies were conducted concurrently in community-based opiate treatment prescribing services (n=12) across 10 geographic locations in Ireland. The first study, involving a range of staff who had direct contact with service users (n=132) measured the relationship between staff demographics, ORC and training adoption, and data was analysed at the individual level. The second study involved the same staff sample and additional sample of service users (n=262) from the same services. This study measured the relationship between staff and service user characteristics, ORC and client engagement, and data was analysed at the centre level. A concurrent qualitative study with staff, (n=12) was also conducted which explored the narratives of staff about the factors which influence the relationships between ORC and innovation adoption.

Results: The systematic literature reviews showed that although the same tool was used to measure ORC across all of the included papers there was significant heterogeneity in study designs and outcomes measured. ORC is predictive of how effectively services can deliver treatment and adopt new innovations into practice. Better ORC ratings (resources, staff attributes, change drivers and in particular organisational climate), related to more effective innovation adoption and better client engagement. Having good organisational climate was of particular importance. The majority of studies were cross-sectional and there was a dearth of qualitative, interventional or quasi-experimental studies which involved the use of ORC measures. Little was known about how to address ORC deficits once they are identified, and generalisability of findings outside the US was not clear.

In the first cross-sectional survey undertaken in Irish community opiate substitution treatment services, ORC and staff characteristics were shown to be predictive of training adoption. Staff who were longer in post and with higher levels of education were more likely to engage in a process of training adoption. In services where staff perceived there to be better resources, lower organisational needs, fewer pressures for change, less stress, and better influence with peers they reported higher engagement in a process of training adoption. Disciplines, such as counsellors, reported higher levels of training adoption than other professional groups.

In the second cross-sectional survey, involving staff and service users, staff perceptions of ORC were also predictive of better service user engagement. In particular, in services where staff reported greater levels of autonomy, service users reported higher levels of treatment participation, better therapeutic relationships, and higher satisfaction with treatment. Service users who were the longest in treatment reported significantly poorer rapport with staff and were less likely to seek support from peers, while those in stable accommodation reported greater participation in treatment. Levels of peer support were not related to ORC measures, but those with lower levels of education and those in early treatment were more likely to seek support from peers.

Findings from both these quantitative studies expanded results using ORC from the US to the Irish context. Concurrent qualitative inquiry with staff showed that change *itself* was described both in respect of how a service responded to immediate service user needs *or* supported planned change. Little distinction was made in respect of service attributes which facilitated a response in either context. Overwhelmingly, staff contextualised current service effectiveness, historical change, and desired change in how effectively their services met service user needs, which was also viewed

as a significant motivation for change. Differences in operational standards across services in terms of practices, policy implementation, job roles, divisions between professional groups, and recruitment and retention of staff inhibited change adoption. Factors which were identified in terms of inhibiting or facilitating planned change were consistent with the wider literature on change implementation but provided unique insights in the context of substance misuse services.

Consideration of the qualitative findings provided possible explanations for relationships identified in the quantitative inquiry in this mixed methods study. Qualitative data also identified aspects of organisations which were important to staff and relevant to ORC but were not identified as being important in quantitative inquiry. Analysis of quantitative and qualitative data within the context of the wider literature provided more understanding of the mechanisms which underpinned relationships between ORC, service user engagement, innovation adoption and helped to understand how some of these relationships might work in practice. Qualitative inquiry also identified organisational factors which were identified as being important to staff but were not captured by ORC measurements. This also helped to understand both currently and retrospectively how cultural factors, social factors and policy can influence staff and service user evaluations of services. These related to areas such as drivers of change, resources, staff recruitment and retention, governance and standardisation of practices and the organisation and planning of services.

Conclusion: A wide range of complex but interdependent factors which influence how the 'eco-system' of services operate were identified. ORC measures provide valuable insights into the dynamics and process of treatment and these can be used to identify what aspects of services make a service more likely to adopt new innovations or more effectively engage service users.

Qualitative inquiry provides rich information which can be used to understand *how* and *why* relationships might exist or not in quantitative inquiry. Evidence presented in this thesis, including primary research confirms the importance of assessing staff, organisational and service user attributes as part of an overall systemic approach to bolster policy and improve the quality of substance misuse treatment.

Introduction

Drug and alcohol use is endemic across societies, plays an important role in culture and ceremonies, and is likely to continue (Rassool, 2010). Alcohol and drug use account for about 5.4% of the global disease burden and drug and alcohol use and misuse is common across Europe (World Health Organisation, 2010, EMCDDA, 2020b). An opioid epidemic in the US has seen almost one million people die of opiate related overdoses since 1999 (CDC, 2021). In Europe, there has also been an alarming increase in opiate related deaths some of which has been attributed to factors such as ageing cohorts of drug users, increased drug potency, and poly drug use including alcohol and other depressants (EMCDDA, 2019a, Public Health England, 2016)

Ireland is not unlike other developed countries in that of all people who use drugs those who are dependent on opiates have a disproportionate impact on the treatment and criminal justice system (EMCDDA, 2019c). For this group, we know that opiate substitute treatment (OST)[1], such as buprenorphine or methadone, delivered in the community in conjunction with psycho-social supports is an appropriate treatment approach which reduces the harms caused by drug use including death (EMCDDA, 2021a, Comiskey et al., 2009). OST treatment is generally available to people who are dependent on opiates throughout Ireland.

In Ireland, specialist OST services are typically housed in a single building and are staffed by multi-disciplinary teams which can include doctors, nurses, therapists, and outreach workers.

[1] Opiate substitution treatment or OST may imply that treatment is bio-medical only, but OST is a widely recognised term for substitute prescribing which is typically delivered in conjunction with psychosocial supports. In the Irish context, OST could also be described as 'tier-3' prescribing services, as outlined in the National Drugs Rehabilitation Framework (Doyle and Ivanovic, 2009)

Approximately 70% of the cost of providing treatment is spent on employing these staff (Government of Ireland, 2013). In addition to this, while there are significant known economic benefits to providing treatment for people who are dependent on opiates, international evidence suggests that some services are better than others at providing treatment and support services (Simpson et al., 2009). Yet, little is known about *how* or *why* organisational aspects such as skill mix, staff training, or the process and dynamics of treatment services are likely to impact on their effectiveness.

There is also limited evidence in the context of European drug treatment services of strategic workforce planning- combined with appropriate and structured development of treatment systems (EMCDDA, 2019b). In the context of the provision of drug treatment services, where drug use itself and investment in treatment is subject to ideological or moral considerations, it is imperative that we obtain sufficient evidence to support optimal functioning of these services. This evidence can be used as a bulwark against ad hoc strategic and operational decision making in relation to substance misuse treatment services (Duke and Thom, 2014). The concept of Organisational Readiness to Change (ORC) has been successfully operationalised in drug treatment services in many countries as a measure of how the attributes of services can relate to different aspects of their effectiveness (Kelly et al., 2018, 2017, Lehman et al., 2012a, Simpson et al., 2007). No such studies have been conducted in the Irish context.

Aims

The overall aim of this study was to identify and describe aspects of community-based OST services which were perceived to make them more effective at adapting to change and delivering treatment for people who are dependent on opiates. This thesis is presented as a series of

publications apart from Chapters 1,2,4 and 8. The publications have either been accepted for publication or are under review at the time of thesis submission. The thesis layout and objectives are as follows:

Table 1. 1 Overview of aims and objectives of chapters

Chapter	Aim/Objectives
Chapter 1	The purpose of this chapter is to describe the context in which substances are used, describe how substance use is conceptualised, to provide an overview of substance use and misuse; cultural, historical, theoretical and policy-based aspects, exploration of terminology, discuss opiate use; its impact and treatment. To offer some critique on how drug policies and treatment developed in the Irish context.
Chapter 2	Describe workforce development, its importance and the current state of the organisation of workforce and treatment services in Ireland. Explore the relevance of workforce development and organisational development for the treatment of people who use drugs. Provide further justification for focusing on organisations to measure the effectiveness of workforce development strategies. Provide an overview and discussion of organisational theories and organisational change theories with a particular focus on organisational readiness to change
Chapter 3	Critically describe and discuss the literature on organisational readiness to change in substance misuse treatment services. Report on two scientific papers; systematic reviews on organisational readiness to change and (i) innovation adoption[2] (ii) client engagement[3]
Chapter 4	Describe a mixed methods study design which explored the relationship between organisational readiness to change and (i) client engagement (ii) innovation adoption in Irish opiate community prescribing services
Chapter 5	Report on a quantitative scientific study which explored the relationship between staff perceptions of organisational readiness to change, staff characteristics and a process of training adoption in Irish community-based OST services[4]
Chapter 6	Report on a quantitative scientific study which explored the relationship between staff perceptions of organisational readiness to change, staff and service user characteristics, and service user engagement in Irish community-based OST services[5]
Chapter 7	Report on a qualitative scientific study which explored staff narratives of the factors which influence the dynamics and process of treatment services, particularly in relation to the implementation of new innovations and change[6].
Chapter 8	Summarise the overall findings from study and triangulation of results from quantitative and qualitative inquiry, make recommendations for policy, practice and research before providing a brief overall conclusion.

[2] KELLY, P., HEGARTY, J., BARRY, J., DYER, K. & HORGAN, A. 2018. The relationship between staff perceptions of organisational readiness to change and client outcomes in substance misuse treatment programmes: A systematic review. *Journal of Substance Use*, 23**,** 223-239 https://doi.org/10.1080/14659891.2017.1394385

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Chapter 1: Overview of Substance Misuse, Theories, Treatment and Policy

1.1 Introduction

The purpose of this chapter is to illustrate some of the complexities involved in providing and receiving treatment for people who use drugs and in particular for people who are dependent on opiates. This will be accomplished through providing an overview of the historical and social context in which drugs and alcohol have been and are used. An overview of the plethora of terms used to describe substance misuse will also be provided. Theoretical and conceptual interpretations on which many of these terms are based will be described, as will their related treatment approaches. These, like drug treatment and policy in Ireland have developed in a unique socio-cultural and economic context, and this will be discussed with a view to contextualising and critiquing policy and the development of Irish treatment services.

People who are dependent on opiates have a disproportionate health and economic impact. The benefits of providing treatment for this group of individuals and society will be discussed and some of the gaps in evidence regarding policy and treatment provision, with a particular focus on treatment service evaluation will be identified. In conclusion, a brief argument will be proposed for further examination of organisational and systemic variables which influence the development of high-quality treatment services.

1.2 Historical overview of substance use and description of terms

Humankind's relationship with psychoactive substances is much older than recorded history. In this context, it has been argued that over millions of years, a symbiotic and co-evolutionary process took place between psychotropic plants and humans (Durrant et al., 2009, Hill and Newlin, 2002). Throughout human existence, there are a plethora of examples of the use of psychotropic drugs across a multitude of social and cultural contexts, some examples of which date back to archaeological findings which are over 200 million years old (Saah, 2005, Sullivan and Hagen, 2002). 'From the earliest time, alcohol, tobacco and other psychoactive substances have been used for medicinal, religious, cultural and recreational purposes and as a social lubricant' (Rassool, 2004 ,p5). The largely Christian based religious and cultural heritage of Europe has been no exception to this.

Since history began, drug use has been the subject of discussion in literature and popular culture. The earliest reference to alcohol misuse appears in the Bible referring to Noah's drunkenness and plantation of a vineyard (Gossop, 2014, Rassool, 2004). Alcohol is ritualised in Christian ceremonies, perhaps explaining some of its rise to prominence in Europe (Rassool, 2004). Sigmund Freud famously wrote a paper on the beneficial effects of cocaine titled 'Uber coca', while Pope Leo XIII awarded a gold medal for a cocaine tonic called Vina Mariani in the 19th century, referring to the tonic as a 'benefactor for humanity' (Rassool, 2004, Tyler, 1986). Opium use has been brought into the popular imagination by writers such as Shakespeare, Colridge and De Qunicy (Jay, 2010, Rassool, 2004). In the 19th century in the UK and Ireland opium could be bought over the counter in a tincture called laudanum (Rassool, 2010).

Trends in drug use also change throughout time. The 1960's, a period of significant social change in Europe and the United States, saw drugs such as LSD and Cannabis enter mainstream culture (Tyler, 1986). More recently the 'dance scene' has seen the increasing popularity of drugs such as ecstasy, ketamine and new psychoactive substances such as cathinone's and other high potency synthetic drugs (Wood and Dargan, 2012, Nutt, 2012). Overall, given the length and depth of the relationship between people and substance use, the evidence tells us that it is unlikely that we will ever accomplish an objective of a drug free world, and our policy and treatment response should reflect this (Gossop, 2014, Nutt, 2012, Babor et al., 2010).

A plethora of terms have developed over time to describe how people have used drugs and their consequences. The many differences in these terms have occurred for cultural reasons, and due to developments in how drug use is understood (West, 2006, Gossop, 2006a, Rassool, 2004). Many of these terms are conflated, and it is important to distinguish between them. Michael Gossop (2006a), one of the world's leading researchers on addictions, describes how the use of terms such as addiction or addict, substance use, misuse or abuse and even the use of the word patient, have caused consternation and controversy. It has been argued that many of these terms have helped to further stigmatise an already marginalised group in society and should be avoided (O'Dowd, 2018). An overview of some of the key terms used in the field is available in Table 1. 2.

In a recent but seminal report on stigma and perceptions of drug use, The Global Commission on Drug Policy (2017), attempts to distinguish between the two important concepts of *addiction* and *dependence.* This report describes *dependence* as being reliant on a substance in order to function, a feature of which is withdrawals being experienced following abrupt cessation. This description

can be applied to people who take prescription medicines such as anti-depressants or opioids for pain relief. This is contrasted with *addiction* which is characterised by compulsive reward seeking behaviour, despite knowledge of its harmful consequences, i.e. a loss of control over ones behaviour. Unlike *dependence*, *addiction* can incorporate behaviours such as gambling, sex or even food addiction. West (2006) describes the term addiction as an abstract concept which is socially, not clinically defined. For this reason, the general public, politicians, many clinicians, and even researchers often subscribe to a view of addiction which is inaccurate. For example, people who are stable on substitute medication therapy, such as methadone, are often described pejoratively as 'addicts', but should actually be classed as dependent (O'Brien, 2006).

There are two key diagnostic manuals which categorise people who use drugs, and both use different terminology. The term *dependence* is closely associated with The World Health Organisations (WHO) International Classification of Diseases (ICD-10) (2007). Dependence can be described in different ways depending on circumstances, but it involves the presence of a cluster of symptoms and behaviours which must have been present over time and have caused harm to an individual. The American Psychiatric Associations diagnostic manual, The DSM-V (2013) uses the term *substance misuse disorder* to describe a similar cluster of symptoms, which can also be described in different ways depending on their severity and impact.

Problem drug use is another term which has been used in the literature and is defined by the European Monitoring Centre for Drugs (EMCDDA) as 'injecting drug use or long duration or regular use of opioids, cocaine and/or amphetamines' (European Monitoring Centre for Drugs and Drug Addiction, 2015c). Until recently in Ireland, for research purposes, the term *problem drug*

use was used to describe opioid users only (Health Research Board, 2015b). More recently however, the EMCDDA has adopted the term *high risk drug use*. This definition has been broadened to include a wider spectrum of drugs and involves 'recurrent drug use that is causing actual harms to the person or is placing the person at risk of suffering such harms' (Thanki and Vicente, 2013 ,p3). This term and its definition will now be universally adopted by all EU countries including Ireland, when reporting to the EMCDDA. This is beneficial for monitoring purposes, as many harms are caused by people who use drugs when physical dependence and compulsion or addiction are not present (The Global Commission on Drug Policy, 2017). For the purpose of this work, as recommended by The Global Commission on Drug Policy (2017) and in order to avoid the use of stigmatising language, the new terms; *people who use drugs* and *people who are dependent on drugs,* will be used when possible. In keeping with the trends in the UK and Ireland, the term *substance misuse* will be used to refer to illegal and potentially harmful drug use.

Table 1. 2 Terms used to describe substance use and dependence

Term	**Definition**	**Reference**
Addiction	A syndrome where reward seeking behaviour has become out of control for a person	(West, 2006)
Dependence	Diagnostic criteria / a cluster of physical, social and behavioural symptoms that need to have been present for a period of time before diagnosis can be made	(World Health Organisation, 2007)
Substance misuse disorder	Diagnostic criteria / a cluster of physical, social and behavioural symptoms that need to have been present for a period of time before diagnosis can be made	(American Psychiatric Association, 2013)
Substance use	The ingestion of a substance which is used for therapeutic purposes or as prescribed by medical practitioners	(Rassool, 2004)
Substance misuse	The illegal or illicit drug taking or alcohol consumption which leads a person to experience social, psychological, physical or legal problems related to intoxication or regular excessive consumption and/or dependence	(National Drug Treatment Centre, 2015)
Substance abuse	The harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs	(World Health Organisation, 2015b)
Problem drug use/user	Injecting drug use or long duration or regular use of opioids, cocaine and/or amphetamines. In Ireland, this term has often been used to refer to opioid users only	(EMCDDA, 2015b, Health Research Board, 2015)

Term	Definition	Reference
High risk drug use/user	Recurrent drug use that is causing actual harms to the person, or is placing the person at risk of suffering such harms	(EMCDDA, 2015b)
People who are dependent on drugs	A less stigmatising term for dependence or addiction	(Global Commission on Drugs Policy, 2018)
People who use drugs	A less stigmatising term for substance misuse or substance abuse	(Global Commission on Drugs Policy, 2018)

1.3 Theories, concepts and treatment of addiction

There are a range of theories or models of addiction and many of these have influenced corresponding treatment approaches, although no single theory is complete enough to allow us to understand addiction or why people misuse substances (Rassool, 2010). It is important to note that, as with descriptions of people who are dependent on drugs, there can be considerable overlap between many of the theories of addiction or dependence and their treatments (West, 2006).

Within Table 1. 3 a succinct overview of some of the principal interpretations of addiction and their related treatment models is provided. In practice, the utilisation of these approaches by service users and treatment services is often subject to individual preferences, and the availability of treatments in particular localities (Gossop, 2006a). Historically, how, when and where different treatments are made available to people who use drugs, has often been influenced by ideological as opposed to pragmatic considerations on behalf of policy makers and treatment providers (Middleton et al., 2016, Butler, 2011).

Some authors argue that the moral model and the disease model of addiction are the most dominant models of the twentieth century and continue to co-exist and dominate contemporary attitudes

towards addictions (Henden et al., 2013, Morse, 2004). The moral model of human behaviour prevailed throughout the 18th century in Britain and the United States and the same view of substance misuse was re-enforced by the religiously aligned 'Temperance movement' which advocated abstinence, particularly from alcohol (McMurran, 1994). The moral model views substance misuse as a sign of moral weakness which can only be rectified through punishment or spiritual enlightenment. The influence of the moral view of drug use on policy making cannot be underestimated, even in the face of evidence which suggests that an alternative approach would be more affective. From an international perspective, despite their continued widespread use, punitive measures have not been shown to reduce drug use or harms to individuals and society while, conversely, approaching addiction as a health problem has been shown to be significantly more effective (Babor et al., 2010).

There are varying interpretations in texts of when a medical or disease model began to emerge (Rassool, 2010, McMurran, 1994). 'The disease model or medical model of addiction became prominent in the nineteenth century' (McMurran, 1994,p2). This was strongly influenced by the application of new medical concepts to addictions and the idea of free will began to give way to determinism where undesirable behaviours seemed to have a physiological basis (McMurran, 1994). The foundation of the Alcoholics Anonymous fellowship and the development of the disease model by Jellineck gave rise to the prominence of the disease model (Rassool, 2010, McMurran, 1994). This is where the terms 'alcoholism' and 'alcoholic' were first used. Treatment fellowships such as Narcotics Anonymous and Cocaine Anonymous have also developed using the Alcoholics Anonymous model (McMurran, 1994).

Important psychological models of addiction or dependence incorporate behavioural and social learning theories and are based on the concept of instrumental learning (Rassool, 2010, West, 2006, Rassool, 2004, McMurran, 1994). The use of drugs can be motivated by appetitive and aversive stimuli such as the hedonic rewards or positive re-enforcement from the drug or the avoidance of withdrawals known as negative re-enforcement. Users can also learn to unconsciously associate physical, social and environmental 'cues' with drug use and the maintenance of drug taking behaviour is the result of the pairing of drug taking with environments or situations (West, 2006, Drummond et al., 1990). Adverse environments, such as poor social conditions can act as incentives for people to use drugs.

One of the most important examples of this was the natural experiment of the Vietnam war where up to 20% of American troops were dependent on opioids under the conditions of conflict, while less than 1% were dependent upon their return to civilian life. These reductions are remarkable when compared to domestically addicted populations (Gossop, 2014). Cognitive Behavioural Therapy (CBT), Relapse Prevention (RP), and Cue Exposure Therapy (CET) are all therapies based on this interpretation of addiction or dependence (Park et al., 2014, Beck et al., 1993, Marlatt and Donovan, 2005). These approaches are more effective when they are used in conjunction with pharmacological treatments (Jhanjee, 2014, Donovan and Witkiewitz, 2012, Rassool, 2011, Gossop, 2006a).

One of the most important mechanisms underpinning instrumental learning is the brain reward pathway in the human brain (West, 2006). From the early stages of human evolution, it is thought that all human behaviour has been mediated primarily by the ancient dopaminergic and

serotonergic systems within the human brain (Saah, 2005). Psychoactive substances of natural origin such as opium, cannabis, cocaine and alcohol produce hedonic rewards by activating important neurotransmitters such as dopamine and serotonin in the brain (Nutt, 2012, Cami and Farre, 2003). Although each drug that has been studied has some idiosyncratic mechanisms of action, it has been shown that virtually all drugs of abuse have common effects, either directly or indirectly on this single reward pathway, deep within the brain (Leshner, 2003). 'Addiction arises through interaction of evolutionary ancient systems in the brain, designed to promote the pursuit of natural rewards, and contemporary environments where purified and potent forms of drugs are readily available' (Durrant et al., 2009,p1049). It is incorrect to reduce drug use purely to a neurobiological process as brain development is responsive to environmental cues. Leshner (2003,p192) reflects this view when he observes that while addiction can be viewed as a brain disease, 'it is not that simple, as it is a brain disease for which the social contexts in which it has developed and is expressed are critically important'.

Pharmacological treatments such as methadone, buprenorphine for opioid dependence or chloradiazapoxide for treating alcohol dependence have a specific action in the brain and are effective for alleviating physiological symptoms of dependence and reducing cravings (Gossop, 2014). All pharmacological treatments for substance dependence have important social and psychological implications and are more effective when administered in conjunction with psychosocial interventions (World Health Organisation, 2009, National Institute for Health and Clinical Excellence, 2007, Royal College of General Practitioners, 2005).

Although it is not expressly based on a specific theory of addiction or dependence, it is arguable that therapies such Motivational Interviewing (MI) focus on this internal conflict through developing conscious discrepancy between conscious and unconscious motives, where previously the service user was ambivalent. MI is defined as 'a service user-centred, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence' (Miller and Rollnick, 2002,p25). MI is a broadly used therapeutic intervention which views users as being ambivalent in about their use and seeks to develop cognitive discrepancy between behaviours and a patients conscious goals or values (Miller and Rollnick, 2002, Gossop, 2006a). MI assumes that by exploring ambivalence using a non-confrontational, person-centred approach it will enable service users to affect change (Miller and Rollnick, 2002). A Cochrane review has shown that MI is effective in reducing drug use in comparison with no intervention (Smedslund et al., 2011). MI has a positive and developing evidence base in terms of its efficacy (Rassool, 2011, Gossop, 2006a).

The Trans Theoretical Model of Behaviour Change (TTM) (Prochaska et al., 1994) proposes that recovery from addiction involves transition through five stages. It has been argued that the TTM model can be used to understand how to appropriately 'match' therapeutic interventions to individuals for example, implementing MI in the contemplation and pre-contemplation phases may yield higher efficacy (Miller and Rollnick, 2002). Relapse prevention is aimed at the maintenance stage of TTM (Marlatt and Donovan, 2005), while arguably CBT might be useful in the action stage. Empirical evidence for this type of matching is however quite mixed (Migneault et al., 2005). And while the TTM model has been a widely popular model in practice it has been criticised for its lack of applicability in practice (West, 2006). The applicability of the TTM model in practice

has been called into question for reasons such as drawing arbitrary lines around an individual's progression of change or for assuming that individuals make clear formulations when making changes (Mossière and Serin, 2014, Sutton, 2001). Predictions using the TTM model have been shown to be less efficacious than those made using alternative change models (Abrams et al., 2000)

Finally, the current diagnostic criteria for dependence is a biopsychosocial model of addiction or dependence. The diagnostic manuals ICD-10 (World Health Organisation, 2007) and the DSM-V (American Psychiatric Association, 2013) are currently used in Ireland to identify if an individual exhibits a certain cluster of cognitive, behavioural and physiological symptoms in order to diagnose substance dependence. The dependence syndrome can be applied to a wide range of psychoactive substances. Both diagnostic manuals, base their criteria on a syndrome described by Edwards and Gross (1976) which have six components:

1. Increased tolerance to a substance
2. Repeated withdrawal symptoms
3. Compulsion or cravings to use the drug
4. Using to relieve withdrawal symptoms
5. Narrowing of the repertoire (e.g. using becoming an everyday activity)
6. Rapid reinstatement of use after abstinence

Usually, a diagnosis is made if three or more of these symptoms have been present together in the previous year. Diagnosis can be useful for the treatment of the disorder but it also provides a measuring tool for research and public health purposes. It is still an appropriate view, based on

this definition, that a substance dependent person has arguably had their 'normal' brain motivational system 'hijacked' by their desire to consume a substance (Hyman, 2005). Equally, all of the models discussed here are relevant to a bio-psycho-social interpretation of dependence but this broader interpretation of addiction is not without its difficulties. Rounsaville (2002) identifies that the interpretation of the diagnostic criteria can be subjective in that physiological withdrawals may vary in severity, a craving may vary in strength and intensity, and while tolerance and harmful consequences may be present in many cases, they can exist at a variance of extremities from mild to severe. In response to this, the American Psychiatric Association (2013) has incorporated levels of dependency such as mild, moderate and severe into its latest DSM-5 manual.

Discussion of theories, concepts and models of addiction demonstrates that the interpretation of dependence or addiction is complex as no single model explains its causes which are multiple. This has implications for policy and practice and Rassool (2004,p23) states that 'Substance misuse and human behaviour are complex issues that require a holistic approach in both the understanding of the underlying causes of substance misuse and in the application of clinical practice'.

Table 1. 3 Models and Theories of addiction, brief explanation, and related treatments

Model/Theory	Brief Explanation/background	Related Approach
Moral Model	Dependence is viewed as a moral failure or a sign of poor character. Full responsibility for addiction is borne by the individual. Arguably the most dominant model of the 20th century (West, 2006).	Social disapproval, spiritual guidance or moral persuasion, imprisonment (Pickard et al., 2015, Rassool, 2004).
Medical/Disease	Became prominent in the 19th century when the medical profession began to recognise determinism over free will. Dependence/addiction is also viewed as a life-long disease for which there is no cure (West, 2006, McMurran, 1994).	Abstinence based, 12-step fellowships such as Alcoholics anonymous or narcotics anonymous (McMurran, 1994)
Behavioural Learning Theory & Social Learning Theory	Based on the concepts of operant and classical conditioning. This views dependence as a behaviour which is learned and re-enforced through the acquisition of pleasure or the avoidance of pain. Through an unconscious	Cognitive Behavioural Therapy (CBT), Relapse Prevention (RP) or Cue Exposure Therapy (CET)

Model/Theory	Brief Explanation/background	Related Approach
	learning process, people also learn to associate different physical, psychological and environmental cues or *triggers* with substance misuse. These associations can be unlearned over time until the thought and behaviours are extinguished (Wanigaratne et al., 2006).	(Park et al., 2014, Donovan and Witkiewitz, 2012, Beck et al., 1993)
***Motivational Interviewing (MI)**	*This counselling approach is not expressly based on a specific theory of addiction. MI is defined as 'a service user-centred, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence' (Miller and Rollnick, 2002,p25). MI views people with addiction/dependence as being 'ambivalent' about stopping and it seeks to develop cognitive discrepancy between a patients behaviour and their unconscious goals or values by using specialised counselling techniques (Miller and Rollnick, 2002, Gossop, 2006b)	MI can be delivered in the context of one to one interventions or in group therapy (Miller and Rollnick, 2012, Wagner and Ingersoll, 2012)
Transtheoretical model of change (TTM)	This model proposes that recovery from addiction/ dependence involves transition through five stages: (1) Pre-contemplation (2) Contemplation (3) Preparation (4) Action (5) Maintenance (6) Termination (Prochaska and Velicer, 1997)	It is suggested that this model can be used to 'target' appropriate interventions, such as MI or RP, based on where a person is on the cycle of change (Velasquez et al., 2005)
Neurobiological Theories	Dependence is created as the brain reward system, an ancient evolutionary pathway designed to ensure that humans engage in activities important to survival, such as eating and having sex, is effectively 'hijacked' or 're-wired' by substance misuse (Durrant et al., 2009, Saah, 2005). Psychoactive substances stimulate this reward pathway to such a degree that ordinary life satisfactions appear feeble (Sullivan and Hagen, 2002). Neuro-adaptation occurs during both the acquisition of dependence and during treatment which can increase both decrease tolerance and reward.	Psycho-social treatments listed above and pharmacological substitute treatments such as methadone, buprenorphine. Pharmacological treatment work by reducing withdrawal symptoms and craving (Gossop, 2014).
Bio-psycho-social	Defined by the two psychiatric diagnostic manuals, the ICD-10 AND DSM-V (World Health Organisation, 2007, American Psychiatric Association, 2013)	Evidence based treatment is recommended and this may incorporate any of the above

1.4 Introduction to opium, opioids & their effects

Of all the illicit drugs, opioids, and in particular heroin, have a disproportionate impact. People who use opioids account for the largest number of those in treatment, incur the most significant costs economically and in terms of the loss of human life (EMCDDA, 2018, Gossop, 2006a). Opioids are a family of natural or synthetic drugs that can detach the user from physical and

psychological discomfort while simultaneously inducing a sense of wellbeing (Koob and Kreek, 2007).

Opium is the sap which is extracted from the opium poppy (Rassool, 2010). The history of opioid use and dependence goes back thousands of years but it is only relatively recently that it has taken its current form (Gossop, 2014). Morphine, named after Morpheus, the god of dreams, was first extracted from opium in 1803 and it, along with the invention of the hypodermic needle in 1843 acted as the catalyst for the problem of opioid use as we know it today (Gossop, 2014). Heroin, was derived from morphine in 1898 and was initially and ironically used as a treatment for morphine addiction, while methadone which later played an important part in the medical treatment of opioid dependence, was first synthesised in 1939 by a German pharmaceutical firm (Gossop, 2014). Today, most of Europe's illicit heroin supply is produced in Afghanistan and arrives via Turkey and Eastern Europe on the streets of Ireland as a brown powder which can be smoked or 'cooked up' and injected (Gossop, 2014, Nutt, 2012).

Opioids act upon mu, kappa, and delta receptors which are distributed widely in the brain and they produce the reinforcing effects of analgesia and euphoria and other direct opioid effects (World Health Organisation, 2004). Subjectively, the effects of opioids vary, but typically drugs like heroin produce a dreamy effect which are accompanied by feelings of warmth, calm and self-sufficiency which can place the troubles of the world at a distance (Gossop, 2014, Tyler, 1986). Individuals can take heroin to deal with psychological or physical pain (Nutt, 2012). Neuro-adaptation following repeated exposure to opioids result in tolerance and a physical withdrawal

syndrome and this is one of the factors which can lead to increases in behaviours related to obtaining the drug and dependence (Nutt, 2012, Cami and Farre, 2003).

After repeated exposure to the effects of a drug, individuals can also learn to develop strong and automatic associations between drug use and specific emotional and circumstantial experiences, making relapse more likely even after prolonged periods of abstinence (West, 2006, Beck et al., 1993). Opioid dependence has been described as a chronic relapsing disorder with impairment in social and occupational functioning and dependence can last for several years, or even a lifetime (Koob and Kreek, 2007). Opioid dependence, like other substances is typically characterised by a loss of control over one's drug use despite several unsuccessful attempts to reduce or cease intake (West, 2006).

Due in part to its potency, illegality and methods of administration, dependency on illicit heroin is problematic and it incurs significant costs to the individual and society (Nutt, 2012). Opioid use in Ireland and internationally is strongly associated with co-occurring social problems such as poverty, homelessness, unemployment and criminality (Mayock and Butler, 2021b, Gossop, 2014) and increased risks for the children of dependent parents (França et al., 2016, Hope, 2011). These consequences present challenges for policy makers, treatment systems and organisations as well as individuals who are tasked with caring for in-treatment opiate users.

1.5 Overview of substance misuse & opioid misuse; epidemiology

People who use both licit and illicit drugs form a significant portion of the world's population. The World Health Organisation states that there are 2 billion alcohol users, 1.3 billion smokers and 185

million illicit drug users worldwide (World Health Organisation, 2015a). Drug use, including alcohol around the world has been increasing, both in terms of the proportion and numbers of the world's population that uses drugs. The number of users ages 15-64 increased from 210 million, or 4.8% of the global population in 2009 to 269 million or 5.3% of the global population in 2018 (United Nations Office for Drugs and Crime, 2020). Approximately 3 million people die each year as a result of alcohol use, accounting for 5.3% of all deaths globally (World Health Organisation, 2021). Complicating this picture, is an ageing cohort of drug and alcohol users across the developed world and the prevalence of mental health issues for people who use substances (Mayock and Butler, 2021a, Searby et al., 2016).

In Europe, an estimated 17.4 million people ages 15-64 used drugs last year, with a prevalence rate of 0.35% for opiate users but with opiates involved in 76% of fatal overdoses (EMCDDA, 2021a). In Ireland, the consumption of illegal drugs and alcohol has increased to a point where over 25% of all Irish adults state that they have used an illegal psychoactive substance (National Advisory Committee on Drugs and Alcohol, 2013) and more than half of all Irish adults are classified by the World Health Organisation (2014) criteria as harmful drinkers. Per capita, Ireland's alcohol consumption is amongst the highest in the world's developed nations. Ireland has also seen increases in overall drug use over the last decade (EMCDDA, 2020a).

People who are dependent on drugs, and in particular opiates, present a disproportionate burden on themselves and society when compared to other people who use substances. Available cross-country comparisons in Europe still use the definition of problem drug use. Comparable country data incorporating the new reporting category of high-risk drug use, which includes those formally

categorised as problem drug users, is not yet available across the EU. The majority of those defined as being problem drug users are comprised of people who are dependent on opiates. In this context, The United Kingdom identifies that a rate of 8.06 per 1000 of population are problem drug users. In contrast, The Netherlands has a recorded prevalence rate for problem drug use (opioids) of 1.26 per 1000 of population (EMCDDA, 2015a). In Ireland, the most recent capture-re-capture study estimated that there are 6.18 problem drug users per 1000 of population (Hay, 2017). Overall, these figures place Ireland with amongst the highest rates of problem drug use in Europe. In total, there are almost 19,000 problem drug users (or people who are dependent on opiates) in Ireland. Of this group, approximately half are in treatment (EMCDDA, 2018).

An overview of the primary drugs of choice for people who present for treatment in Ireland is provided within Table 1. 4. These drugs are used in different patterns, in different ways by a plethora of social groupings and treatment services should be able to respond effectively to this. Presenting further challenges, is that alcohol use has also increased in those whose primary problem substance is not alcohol. Between 2002 and 2007 the reported use of alcohol as a problem substance in those seeking treatment for opioid misuse increased by 250% (Long and Lyons, 2010). In 2017, the most commonly reported additional problem substances reported for those in treatment were alcohol (37.5%) benzodiazepines (36.2%) and cannabis (33.1%) (Health Research Board, 2017).

The diversity of drug use in the treatment population is also exemplified by the fact that 61.3% of those that presented for treatment reported problem use of more than one drug (Health Research Board, 2017). This diversity in the population's drug use and drug type poses unique and complex

challenges to our treatment system and workforce. People who are dependent on opiates clearly place the most significant demand on treatment resources and their presentations are often complicated by the use of other substances. Poly drug use is now a norm, and this also poses unique challenges for treatment delivery and resource allocation.

Table 1. 4 Primary drugs treated for all cases entering treatment in Ireland in 2017[7]

Primary Drug	**Percentage**	**n=8922**
Opioids	45%	4016
Cannabis	24.7%	2200
Cocaine	16.8%	1500
Benzodiazepines	9.7%	868
z-drugs	1.1%	82
NPS	0.6%	51
MDMA	0.5%	44
Amphetamines	0.4%	40
Volatile Inhalants	0.1%	6
Other Drugs	1.3%	115

1.6 Consequences of opioid misuse

Substance misuse endangers the health, social and economic foundations for families, communities and countries (World Health Organisation, 2015a). People use drugs in a variety of contexts which are subject to a range of interpersonal, environmental and social influences (Rassool, 2011, Gossop, 2006a). Categorising the overall harms associated with substance misuse is not a straightforward process (Nutt, 2012, Nutt et al., 2010). According to Babor et al. (2010), it is important to make four key conceptual observations [relating to association; types of harm;

[7] HEALTH RESEARCH BOARD 2017. National Drug Treatment Reporting System 2011-2017 Drug Data. Dublin: HRB.

preferences] when discussing harms associated with substance misuse and these imply how important it is to consider the context in which use takes place.

Firstly, the term *association* means co-occurring and does not imply the direction of association is understood. For example, while an overdose may be caused as a direct result of drug use, the lack of provision of ambulance services, or antidote drugs such as naloxone can determine death. Policy maker's choices can determine how strongly substance misuse is associated with harms and it is important, where possible, to distinguish between the two. Secondly, harms are subject to the cultural and political prism through which they are viewed, for example smoking cannabis or even binge drinking is viewed as harmful in some contexts but not in others. Thirdly, a distinction should be drawn between acute harms such as violence and traffic accidents and long-term harms such as the progression of physical and mental health problems. Finally, similar to Gossop (2006a), Babor et al. (2010) observe that those who misuse substances differ hugely in their preferences for different drugs, all of which have different modes of action and varying consequences, although as previously highlighted, poly drug use amongst drug users is now a norm and not an exception.

Nutt et al. (2007) identify that there are three main factors which determine the harms associated with substance misuse; the physical harm caused by the drug, the tendency of the drug to cause dependence and the effect of drug use on families, communities, and society. 'Dependence can be a physical or emotional adaptive state which results from the body's homeostatic response to a repeated drug administration' (Fox et al., 2013 ,p2) and it is important to consider this component as dependence can motivate users to inflict harm via the acquisition of substances through engagement in high risk activities, such as violent crime. At a special conference in 2010, Nutt and

colleagues devised a matrix to assess the harms of drug use (Nutt et al., 2010). This matrix examined 20 different drugs using 16 criteria which were used to analyse harms to self and others in physical, psychological and social categories and it conclusively identified alcohol and heroin (or opioids) as having the highest overall harms (Nutt et al., 2010).

The risks for people who are dependent on opiates is significant. Problem opioid use is associated with a wide range of physical, psychological, and social problems including increased mortality (Ghodse et al., 2009). An estimated 10 to 20 thousand opioid users die in Europe each year because of drug misuse (EMCDDA, 2014). At 69 deaths per million of population against a European average of 14.8 deaths per million Ireland has the third highest mortality rate for drug users in Europe (EMCDDA, 2021a, EMCDDA, 2020a). The substitute medication methadone and heroin were implicated in just over 41% of 350 poisoning deaths in Ireland in 2012 (Health Research Board, 2014). Poly drug use has also seen a rise of 118% in its implication in drug related deaths from 2004 to 2012 and drugs include both licit and illicit drugs (Health Research Board, 2014).

Injecting drugs such as heroin is strongly associated with a range of physical health problems such as blood borne infections like HIV and Hepatitis, infections such as endocarditis and bone and joint infections and abscess and scarring of the skin and veins (Gossop, 2006a, Health Protection Agency et al., 2009, Rassool, 2011). Rassool (2011) describes a strong relationship between psychiatric disorders and addiction and in a well-known UK study, Weaver et al. (2003) identified that over 70% of service users in opioid prescribing services had experienced mental illness. A similar study has never been conducted in Ireland, but a study on substance use and schizophrenia in Ireland (Condren et al., 2001) demonstrated similar prevalence rates with other jurisdictions

(MacGabhann et al., 2004). People who are opiate dependent are also more likely to experience homelessness and be admitted to hospital (Doran et al., 2018). Overall, the available data indicates that there are a wide range of challenges and risks facing this population, and those who help to treat them.

The effect of substance misuse on families and the children of people who are dependent on drugs is also significant (Barlow, 2010, Forrester, 2000). Specific figures are not available in the Irish context, but it is estimated that in Europe between 5% to 30% of children live with a parent who misuses at least one substance (EMCDDA, 2010). Although much of the research in this area does not focus on opiates specifically, the impact of parental substance misuse on children appears to have patterns which are similar, irrespective of the substances involved (McGovern et al., 2017). Children of parents who misuse substances are exposed to much greater risk. These risks include, accidents, deprivation, violence, social stigma and exclusion (Earnshaw et al., 2013, Holland et al., 2013). In addition to this, these children are more likely to become users themselves or suffer from mental illness and psychological and emotional problems as children, or in later life (Donaldson et al., 2016, Jääskeläinen et al., 2016, Barczyk et al., 2013). More specifically, opiate use amongst pregnant mothers is related to a wide range of physical health problems in their children, including neo-natal withdrawal syndrome, which can last up to three months post-partum (França et al., 2016, Stover and Davis, 2015).

There are also many social costs related to opioid dependence such as crime and economic costs. The relationship between drug use including opioid use and crime is complex, with many crimes being related to simple possession (EMCDDA, 2021c). It is also a challenge to analyse the

relationship between trends in illicit drug use and offending because of the quality of data available (Morgan, 2014). There are few up to date studies on the costs of crime related to drug use. Previously, it has been estimated that an opiate dependent person is engaged in crime for 40%-60% of the time if not in prison or in treatment (Ball et al., 1983). Estimates from the UK, Ireland and Australia suggest a significant amount of the cost of drug use relate to crime and policing with estimates of drug related crime as a total of all crimes committed ranging from 23% to 56% (Collins and Lapsley, 2008, Connolly, 2006). The cost of drug related crime has never been calculated in Ireland but International studies estimate the costs of drug use in developed countries at anything between 0.2% and 2.7% of GDP (United Nations Office on Drugs and Crime, 1998, Single et al., 1992).

Despite potential inaccuracy in the data, the best available evidence indicates that the individual, family, economic and social impact of drug use, and in particular opioid use is significant. The nature and cause of harms associated with substance misuse is not only complex but can change abruptly with emerging trends. This places particular demands on researchers, policy makers, and frontline treatment providers when attempting to respond effectively to population needs.

1.7 The policy and treatment response to substance misuse in Ireland

For both historical and political reasons, there has been a long history of a provision of healthcare in Ireland by the voluntary and private sector, especially by Catholic Church run organisations and this, amongst other influences, has determined the current shape of services in Ireland (Butler and Mayock, 2005, Quin, 2005). The influence of the conservative values of the Catholic Church on Irish policy making has been significant, although this influence has been waning for some time

(Butler and Mayock, 2005). The involvement of the insurance industry and the role of private medicine has also influenced healthcare in Ireland prompting Barrington (1987,p285) to describe the Irish health care system as ‘an extraordinary symbiosis of public and private medicine’. The earliest addiction rehabilitation programmes in Ireland from the 1970’s onwards were largely run by members of the Catholic order and were heavily influenced by the disease model of addiction or ‘Minnesota model’ and were abstinence based, while utilising a confrontational counselling and education approach (Butler, 2011). These programmes were financed, and still are today, by a combination of public finance, private health insurance, direct service user payment and public fund raising (Butler, 2011).

Illicit drugs did not become widely available in Ireland until the late 1960’s and possibly later in many areas, but alcohol dependency was widespread and was historically treated through the mental health system (Butler, 2014). The Irish policy document ‘Psychiatric Services: Planning for the future’ (Department of Health, 1984) sought to move the treatment of addiction problems into the community and attributed addiction to a range of social and health problems which largely discredited the disease model of alcoholism (Butler, 2014). During the opioid epidemic in Dublin in the 1980’s, the situation in Ireland was reflective of other jurisdictions where there was an overwhelming concern to prevent the spread of HIV. This marked a period where Irish treatment provision shifted towards a more liberal ‘harm minimisation’ approach with the expansion of methadone prescribing and the provision of needle exchanges (Butler and Mayock, 2005, Keenan, 2002). This shift in approach from a policy perspective according to Butler and Mayock (2005), was implicit rather than explicit.

Butler and Mayock (2005) attributed this approach to a political attempt to appease a conservative electorate, while simultaneously providing a practical solution to a real problem. Unlike in the United Kingdom, Ireland implemented this approach with a minimum of public debate or consultation (Butler and Mayock, 2005). For example, the prescribing of Methadone by GP's was authorised in 1998 by a health minister whose party had published a conservative abstinence-based approach party policy towards drugs only a year earlier (Butler and Mayock, 2005). This approach to addiction treatment and health policy in Ireland has been termed, with some irony, as 'An Irish solution to an Irish problem' (Butler and Mayock, 2005 ,p415).

It appears that the most controversial and significant policy shift of recent times occurred however with the publication of the existing mental health policy 'A Vision for Change' (Department of Health, 2006). This policy determined that people with addiction problems would no longer be treated within the mental health system apart from those with a co-occurring mental health problem and substance dependence. This policy, in conjunction with the publication of the National Service Plan for the National Health Service (Health Service Executive, 2005) saw responsibility for addiction treatment shared between social inclusion and primary care (National Documentation Centre on Drug Use, 2005). The reference to addiction in 'A Vision for Change' 'was as notable for its brevity as its content' (Butler, 2014 ,p161) and no evidence based justification for the dislocation of addiction from the mental health services has ever been provided while recommendations from an expert sub-group including psychiatrists before the publication of 'A Vision for Change' was ignored.

The culmination of this controversy in 2006 resulted in an open letter to 'The Irish Times' newspaper from the sub-group criticising the transparency of the process and lack of evidence provided in the decision making of the expert group stating: 'As a multi-disciplinary group, representing the community, voluntary and statutory sectors, we co-operated enthusiastically with the expert group, viewing it as an opportunity to address the very serious deficits in drug and alcohol treatment across Ireland. Not only have we failed in our efforts to ensure a better service for people suffering addictive disorders; we believe that "A Vision for Change" represents a retrograde step for people suffering from drug and alcohol addiction.' (Barry et al., 2006). Subsequent submissions to the independent monitoring group for the implementation of 'A Vision for Change' by the College of Psychiatrists in Ireland Addictions Faculty have continued their criticism of 'A Vision for Change' as a flawed policy (College of Psychiatry of Ireland, 2011, College of Psychiatry of Ireland, 2010). A new mental health policy was published in Ireland in 2020 (Department of Health, 2020). This policy explicitly commits to a 'no wrong door' approach, where people who use drugs or alcohol and dual diagnosis clients should not be excluded from accessing mental health services. It is not yet clear how effectively this policy is being operationalised.

The most recent Irish national drug strategy (NDS) 'Reducing Harm, Supporting Recovery' (Department of Health, 2017a) describes an inter-departmental government policy to minimise the harms to Irish society from alcohol and other drugs. This policy is notable for its change in emphasis to treating drug use as a health based as opposed to criminal justice issue. Most indicative of this change, is the objective of establishing Irelands first medically supervised safe injecting centre. The overall strategy outlines over 50 action points which are based around five key goals:

1. Promote and protect health and wellbeing.
2. Minimise the harms caused by the use and misuse of substances and promote rehabilitation and recovery.
3. Address the harms of drug markets and reduce access to drugs for harmful use.
4. Support participation of individuals, families and communities.
5. Develop sound and comprehensive evidence-informed policies and actions.

There are 14 Local Drug and Alcohol Task Forces and 10 Regional Drug Task Forces in Ireland which play a key role in implementing government strategy (Irish Focal Point, 2014). These task forces implement the NDS in the context of regional needs and are overseen by a government appointed committee. In relation to the structure of treatment services, treatment service standards and development of the workforce, the new NDS specifically refers to the implementation of The National Drugs Rehabilitation Framework (NDRIC) (Doyle and Ivanovic, 2009) in action 2.1.12 and the Health Information and Quality Authority (HIQA) (2012) document 'Safer, Better Healthcare' in action 4.2.43 (Department of Health, 2017a).

NDRIC proposes the integration of services across the Irish healthcare system which will provide standardised screening, assessment, referral and treatment for problematic substance misusers. NDRIC stipulates that high standards of clinical governance be maintained throughout treatment organisations through the universal adaptation of the Quality in Alcohol and Drug Services, Organisational Standards (QUADS) criteria (Health Service Executive, 2014) and that services should be structured using a 'four tiered' interdependent model of care. NDRIC also recommends

that all Irish treatment services adopt the QUADS quality assurance framework as recommended by the Health Service Executive (2014). Elements of this framework include an integrated model of rehabilitation, care planning and case management, standardised assessment procedures and a range of accompanying protocols, agreements and quality standards (Barry and Ivers, 2013). This important document by Doyle and Ivanovic (2009) also recommends a systemic approach and reporting system to the identify 'blocks and gaps' in services which include a focus on organisations and staff. To date, it is not clear how effectively this is being implemented across services.

'Safer better healthcare' (2012) describes a set of standards which if implemented, are designed to improve the standards of a healthcare organisation. These standards are based around eight key themes:

1. Workforce
2. Use of resources
3. Use of Information
4. Better Health and Wellbeing
5. Safe care and support
6. Effective care and support
7. Person-centred care and support
8. Leadership, governance and management

These standards and the QUADS quality framework are not mutually exclusive, and the HSE addiction services have chosen to operationalise 'Safer Better Healthcare' (2012) through the

medium of the QUADS framework. In addition to this, the HSE national addiction training programme (NATP) was founded in 2007 in order to support treatment services through the delivery of quality of training and support of robust treatment systems (Health Service Executive, 2011). There is limited evidence available publicly on either the current existence or activities of the NATP and, historically, minimal public information about the aims and objectives or effectiveness of the NATP has been made available. An unpublished internal Health Service Executive report by Howley (2008) state that the objectives of the NATP were to:

1. Provide training based on current evidence-based practice
2. Prioritise training programmes to meet current and emerging service needs
3. Ensure adequate and appropriate validation for training
4. Support robust systems of treatment for cocaine and other substance misusers
5. Provide value for money in terms of quality service provision and return on investment

To date, there is some descriptive evidence that there has been progress in relation to actions in implementing quality standards in addiction services through the implementation of QUADS, the delivery of training, and the introduction of standardisation of assessments and treatment pathways through the National Rehabilitation Framework (Department of Health, 2015, 2014, 2013, 2012). Within these progress reports, there is limited evidence of improvements in the quality of treatment service in terms of benefits to service users or staff, and it is challenging to measure specific progress year on year because of the descriptive nature of the reporting. Although the implementation of these standards is stipulated through the new NDS, it is notable that there is no

independent oversight of addiction services as there is in other healthcare specialisms (HIQA, 2018).

1.8 Overview of the benefits of providing treatment

Providing treatment for substance misuse is important but it is not the only determinant of health. For people who are dependent on opioids and other drugs, treatment takes place in a much broader context, and while formal treatment provides life-saving interventions, arguably its contribution is small in comparison to other variables in the life course of those who access it (Gossop, 2006a). Despite this, in Ireland and the United Kingdom, formalised treatments for problem drug use have been shown to be effective across a wide range of settings, yielding a multitude of health benefits for individuals, and these benefits consequently reduce social and economic harms (Frank, 2020, Comiskey et al., 2009, Heather et al., 2006).

In practice, it is optimal that pharmacological treatment be accompanied with structured treatment, meaning psychosocial interventions such as Cognitive Behavioural Therapy (CBT) Motivational Interviewing (MI) or Relapse Prevention (RP) and/or providing assistance to address homelessness or unemployment. It is well known that opioid agonist treatment such as methadone, when combined with psychosocial interventions, is significantly more effective than one type of treatment alone (Frank, 2020, Farrell and Barry, 2010, National Institute for Health and Clinical Excellence, 2007). International evidence has shown consistently that pharmacotherapy combined with psychosocial interventions significantly reduce opioid and other drug use, criminal activity, transmission of blood borne viruses including HIV and Hepatitis, opioid overdose, overall mortality and helps to retain people in treatment (Connock et al., 2007, Gossop, 2014, Gossop,

2015). A longitudinal study by Comiskey et al. (2009) identified that many of these findings are consistent with the Irish context. The Irish study concluded that the provision of treatment in Ireland has had significant benefits for both the individual and society through reducing drug use, homelessness, unemployment and through improving the physical health of people who are in treatment for opiate dependency (Comiskey et al., 2009).

In the U.K., it has been demonstrated that the economic and public health benefits derived from providing treatment for substance misuse are also significant (Godfrey et al., 2004). The National Treatment Outcomes Research Study (NTORS) conducted between 1995 and 2000 in the U.K. calculated that the ratio of consequences to net treatment investment varied from 18:1 to 9.5:1, depending on assumptions, and this is said to be a conservative estimate of the benefit–cost ratio because many potential benefits were excluded (Godfrey et al., 2004). Comparatively, for alcohol treatment in the UK across a multitude of settings, Heather et al. (2006) calculate an average cost benefit ratio of 5:1. Despite diminishing returns on investment in treatment as treatment expands, the economic case for providing treatment for people who are substance dependent, and in particular for people who are dependent on opioids, is very strong (Gossop et al., 1998).

It is recognised that many of these economic benefits have been related to crime reduction. In England, until just before the global economic crash, this recognition was instrumental in influencing government policy and securing significant investment in services (Gossop, 2015, McGrail, 2014b). Despite this, there have been no comprehensive studies conducted on the cost savings made through increased expenditure on substance misuse treatment in Ireland. Paradoxically, as Ireland has experienced the most severe recession in recent times and proxy

indicators for increasing rates of substance misuse such as poverty and unemployment have increased, overall spending on addressing the national substance misuse problem decreased between 2008 and 2013 (Irish Focal Point, 2014).

The total government expenditure on reducing drug use in 2017 was over €241 million which has been decreased from €277 million in 2008 (Irish Focal Point, 2014, EMCDDA, 2019c). Approximately half of this is spent on 'health' but it is not clear what proportion of this budget was spent on specialist treatment services (EMCDDA, 2019c). Ascertaining these figures has been complicated historically as the overall figures provided involve expenditure which crosses a number of Government departments. However, we could deduce that, based on figures from other areas of health spending, it is likely that a high proportion of this money is spent on staffing costs. For example, The Health Service Executive (HSE) calculated that workforce costs comprise 70% of expenditure on healthcare (Government of Ireland, 2013, Health Service Executive, 2009). In relation to substance misuse treatment provision, there is a clear need to provide more specific figures if any 'value for money' study is to be conducted.

Evaluating treatment service effectiveness in other ways may also be complicated due to the heterogeneous nature of services and how they provide treatment (Kelly et al., 2018). Treatments typically involve a wide range of psychosocial interventions and substitute prescribing of drugs such as methadone and buprenorphine, but there is often a lack of consistency in how these are delivered (Darker et al., 2015, Humphreys and McLellan, 2011, Broome et al., 2007). Further complicating the picture is that treatment does not work in isolation and there are a plethora of inter-dependent variables which can improve treatment effectiveness (Gossop, 2006a). For

example, the demographic characteristics of the service user, degree of polysubstance use, previous treatment experience, social normative influences and patient and staff attitudes have also been shown to influence treatment effectiveness (Burns et al., 2009, Rieckmann et al., 2007, Veazie and Cai, 2007, Gossop, 2006a).

The most recent review of Irish treatment services revealed that being on an optimal dose of methadone, age, being on anti-psychotic medication and stable accommodation were all factors which contributed to retaining service users in treatment (Darker et al., 2015). The organisational context, in which treatment is delivered such as resources, climate, staff attributes are also important determinants of service user outcomes (Kelly et al., 2018). Treatment for drug use is both effective and cost effective although relatively little is known about what happens in the process of treatment or why treatment works. Research into how or why treatment works has largely been neglected (Gossop, 2006a). Consequently, there is minimal evidence available on exactly how to improve services.

Improving services and measuring these improvements is not an easy task. The scientific base on which treatment is based has changed substantially and the range of substances available have broadened (EMCDDA, 2021a, Barlow, 2010). Policy or research has not typically focused on the development or improvement of services. Traditionally, research related to the effectiveness of public health interventions has focused on categorical factors or disease states and there is a dearth of research which examines the systems which support the development of effective programmes (Cioffi et al., 2004). Gerstein and Harwood (1990) observed over two decades ago that this was reflected in the main body of research into substance misuse treatment where the question ‘does

treatment work?' has been asked far more frequently than '*why* or *how* does treatment work?' Ethridge and Hubbard (2000) suggest that this may have occurred due to the complexity of variables involved and lack of a suitable framework for organising services.

It has been clearly established that providing quality treatment is important and it is also clear that some substance misuse treatment services are more effective than others in determining outcomes for service users (Kelly et al., 2018, Broome et al., 2007). More effective programmes show greater levels of psycho-social functioning and reductions in drug and alcohol use through more effective engagement and retention of service users (Grener et al., 2007, Gossop, 2006b). However, we still know relatively little about the components, process and dynamics of treatment and their relationship with client outcomes (Van de Ven et al., 2020). These unknowns have been referred to these as a 'black box' with treatment being described as 'hard to conceptualise' while calls have been made for further examination of how and why treatment is effective (Gossop, 2006a ,p73). Authors such as Simpson (2004) have made some progress conceptualising suitable organisational frameworks for addiction treatment services, but further understanding of the factors which affect *how* and *why* treatment works is required both in Ireland and internationally.

1.9 Conclusion

The symbiotic relationship between humankind and psychoactive substances is a longstanding one. Historically, the interpretation and management of this relationship has been influenced by a wide range of cultural, social and political factors. Reflective of the international context, conceptualisations of addiction, and more generally substance misuse, have significantly influenced the policy and treatment response to treatment. Opiate use in particular, poses

significant threats to individuals and society, but the treatment and policy responses to this and other types of drug use have not always been effective. Historically, decision making in this area has been facilitated by a lack of evidence, which has allowed responses to substance misuse in Ireland, and elsewhere, to materialise based on arbitrary reasoning and subjective interpretations of addiction. Further evidence of *what works* and *what does not work* within treatment services would help to negate this.

Objectively, we do know that certain types of treatment services are effective and that some services are more effective than others, but there is little overall evidence that allow us to understand *why* this is the case. There is also minimal evidence which allows us to understand how changes in funding, policy and practice, can influence the efficacy of treatment systems. From a national policy perspective, there is a growing recognition of the importance of developing an evidence-based and systemic approach to developing treatment services in terms of their structures, standards of practice and training and education for staff. More evidence is required to support decision making in these areas, particularly to help us understand how some treatment services are better at either adopting new innovations or meeting service user needs.

Expenditure on the treatment system, organisations and workforce, accounts for a significant proportion of overall health expenditure in the face of reducing resources and increasing demands (Government of Ireland, 2013, Health Service Executive, 2015). In the context of optimising the use of scarce resources and improving service user outcomes, developing the workforce and improving treatment systems and organisations is becoming increasingly important in the health and substance misuse sector internationally (Roche et al., 2013, Barlow, 2010, Simpson et al.,

2009). Current policy in Ireland is reflective of this trend (Department of Health, 2017a, Doyle and Ivanovic, 2009) but a more systematic approach is required in order to optimise how organisations deliver treatment in the substance misuse field.

In political terms, a stigmatised and socially marginalised group such as problem drug users may not warrant appropriate attention, but the benefits to society and the economy of providing treatment are likely to be significant (Godfrey et al., 2004). We do know that treatment services with more optimal organisational functioning are likely to yield greater results for those who use them (Broome et al., 2007). Organisational systems including the workforce constitute the largest expense in terms of treatment provision and the workforce and how it operates is the foundation of the treatment system (Kaplan, 2003). There is minimal research available on this important area, and none has been conducted in Ireland to date. If negative outcomes such as mortality rates are to be reduced, then the question *how* and *why* treatment services work deserves further evaluation. In this context, several broad questions require further exploration:

- What does the current empirical literature state in relation to which substance misuse treatment service attributes make a service more effective at delivering treatment?
- If 'good' or 'bad' service attributes have been identified, what type of mechanisms underpin these attributes?
- How can the impact of policy, resources and practices on treatment quality be measured most effectively?
- What specific recommendations should be made in order to make services more effective at delivering treatment?

Chapter 2: The workforce, organisations, and organisational readiness to change in drug treatment services

2.1 Introduction

In this chapter, an overview of the interdependent components of the systems which support drug treatment services will be provided. A systemic assessment of all the workforce variables and their impact on opiate dependent service users in Ireland would require significant time and sources which are beyond the scope of this project. Therefore, a particular emphasis will be placed on the examination of organisations, as these operate at the interface between planning, policy and service users. It is argued that this is where we can measure the impact of a much broader range of variables which help to develop the workforce and influence the context in which it operates. A description and critique of the Irish policy context relating to the drug treatment workforce and related treatment services development will be provided. Within this context, an argument will be presented to shift in the focus of research to examine *why* treatments like OST, psychosocial supports more effectively in some centres than others, as opposed to *does* this type of treatment work.

A historical overview of the study of organisations and a discussion about organisational theory will be provided. Explorations of the theoretical conceptualisation of organisations is necessary if we are to understand how organisations work and more importantly, how they can change to meet demands placed on them, thereby ensuring their survival and their effectiveness. It is for this reason that the complex phenomenon of organisational readiness to change will be considered, its antecedents and consequences will also be described through examination of the empirical and theoretical literature. Through implication and exploration of the subject matter in this chapter, a

case will be built for the exploration of the phenomenon of organisational readiness to change within Irish community OST services.

2.2 Towards a systemic approach to organisational and workforce development

Historically, a range of authors have suggested that a greater research and policy focus on the organisation of substance misuse treatment services is required. Kaplan (2003) identified that we need greater focus on this area and stated that the workforce and the organisational context in which it operates constitute the foundation of the entire treatment and support system. In a literature review and discussion paper, Bell (2002) identified that positive organisational conditions, which include a broad range of variables, such as effective leadership, staff attitudes, and the therapeutic alliance have been shown to result in significant benefits for service users but he observes that there is not enough evidence to show how these can be developed systematically (Bell, 2002). Later, this was supported by Simpson et al. (2009) who argued that it is of paramount importance to understand which aspects of organisational structure and treatment processes are better than others. Still, evidence in this area is of limited tangible benefit to policy makers and planners (Van de Ven et al., 2020, Kelly et al., 2018)

It has also become clear that strategies to understand and develop an effective workforce, organisations and treatment systems need to move far beyond the traditional and narrow focus on the delivery of education and training (Roche and Nicholas, 2017, Barlow, 2010, Roche, 2001). For example, while training and education for staff constitute an important component of developing an effective and efficient treatment system (Roche et al., 2013), Simpson (2002)

identifies that traditional training approaches are associated with levels of failure to transfer to practice in the range of 80-90% and attributes this to systemic or organisational failure. In response to this and other challenges, there is an increasing number of researchers who advocate and have engaged in a 'whole systems' approach when evaluating, planning and implementing effective addiction treatment. These researchers have described and incorporated approaches on how to optimise the development of the workforce as well as the examine a range of interdependent organisational treatment delivery factors (Roche et al., 2013, Lundgren et al., 2013, Simpson and Dansereau, 2007a). Areas of interest have included workforce and treatment delivery factors such as the competency and education and training of staff, therapeutic relationships, service user characteristics, resources, workload, motivation and correspondingly overall organisational functioning. Many of these studies have shown that these interdependent factors in treatment and organisational variables have a direct impact on service user outcomes (Lundgren et al., 2012, Kelly et al., 2010, Meier et al., 2005, Simpson, 2004).

Careful analysis of treatment delivery factors and organisational functioning is however, very complex. The workforce in the addictions area is multi-professional and the work that staff are required to do is complex, ethically fraught and requires a wide range of skills, while decision making often has to be exercised autonomously (Barlow, 2010). A significant level of expertise and a supportive environment is required to deliver appropriate care to a heterogeneous service user group, who often attend treatment services with a multitude of needs. Organisations and workers are expected to implement a wide range of evidence-based interventions in response to changing patterns of drug use, research and changing requirements from funders (Lundgren et al., 2012, Simpson and Dansereau, 2007b).

Given the complexity of service users and the diversity of the workforce in addictions, this presents a unique set of challenges to workers, researchers, policy makers and education providers where a more holistic approach to areas such as training, education, implementation and change management is required (Simpson et al., 2007, Simpson, 2002). There are additional challenges facing the workforce in addiction treatment such as stigma, ideological influences on policy, a lack of resources, lack of public support, and misconceptions about treatment (Duke and Thom, 2014, Kaplan, 2003). Despite this, there is a growing recognition internationally of the need for a systemic approach in order to develop the capacity of the workforce and systems to effectively respond to current and emerging substance misuse issues (Roche and Pidd, 2010).

A multitude of policy makers and experts in the health field refer to the holistic approach to developing the workforce and its surrounding systems as 'workforce development' (Roche and Nicholas, 2017, Barlow, 2010, Jacobs and Hawley, 2009, Cioffi et al., 2004, Kaplan, 2003). The concept of workforce development has been the subject of conceptual discussion but broadly speaking, it is a term used to encapsulate a number of key variables pertaining to individuals, the organisations within which they operate and the systems that surround them (Roche et al., 2013, Baker and Roche, 2002) Jacobs and Hawley (2009,p12) define work force development as 'the coordination of public and private sector policies and programs that provides individuals with the opportunity for a sustainable livelihood and helps organisations achieve exemplary goals, consistent with societal context'. The goal of contemporary workforce development is to develop systems, processes and people that enhance service user outcomes and operate in service user rather than profession-centric ways (Conway et al., 2006).

A key initial aspect of workforce development is to identify the constituent parts of the workforce (Roche, 2002, Cioffi et al., 2004). In an effort to guide the development of the Australian addictions workforce, Roche and Pidd (2010) provide an overview of the factors which influence its development (see Figure 2. 1 and Figure 2. 2). Individual factors such as knowledge, skills and attitudes and systemic factors such as policy, funding, recruitment and retention, accreditation, resources, organisational structures, support mechanisms and incentives are also thought to be important (Roche et al., 2013).



Figure 2. 1: The different levels and components of workforce development (Roche and Pidd, 2010) [permission obtained from author]

Without the effective components in place (Figure 2.1) Roche and Pidd (2010) argue that training and education, which has been traditionally associated with workforce development, is broadly ineffectual.

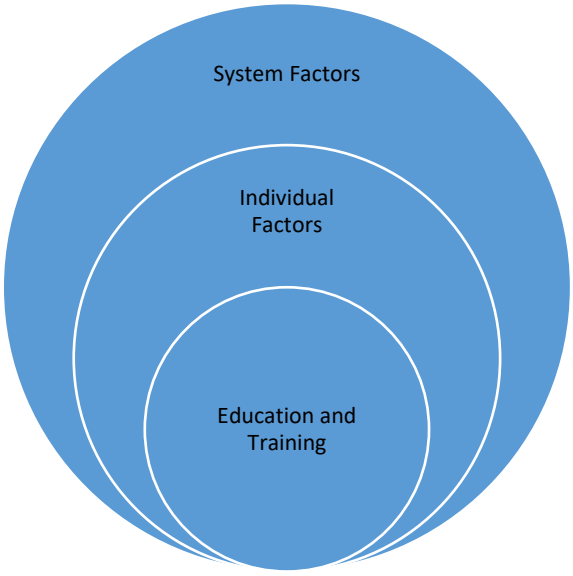


Figure 2. 2 Education and Training as one level of workforce development (Roche and Pidd, 2010) [permission obtained from author]

In a discussion paper on the definition, conceptual boundaries and implications of the emergence of workforce development Jacobs and Hawley (2009) identify that there are five intersecting drivers for workforce development. Brief examples are provided beside each driver here:

1. Globalisation- interconnectedness of markets, technology, competition
2. Technology- opportunities to increase productivity, increased access to learning
3. New economy- pressures on 'cost-effectiveness' e.g 'more for less' agenda
4. Political change- public policy, statutory and voluntary sector service provision
5. Demographic shifts- population trends, workforce competence

These factors are not dissimilar from factors associated with driving organisational change such as; economic, social causes and technological changes as identified by Crowther and Green (2004).

2.3 Organisational and workforce development in Irish addiction services

Irish policies stipulate the importance of workforce and organisational development in healthcare (Health Service Executive, 2021). Despite this, there is currently no cohesive workforce planning strategy specifically for Irish addiction services. The National Drugs Rehabilitation Framework (Doyle and Ivanovic, 2009) is tasked with the integration of services and concerned with organisational quality improvement which includes the development of staff competencies, but it is unclear how the objectives of this policy have been accomplished. Unlike Australia, which recently completed a comprehensive survey of its workforce in this area (Skinner, 2020), demographic information on the workforce and organisational structures in Irish addiction treatment services is limited. Nationally, there is not an agreed comprehensive framework for workforce or organisational development in healthcare, or in the addictions field. It is important that a more comprehensive understanding of these treatment delivery and systems factors is developed.

There are specific challenges which are of relevance to the Irish context. For example, the development of the counselling profession in Irish addiction services has been criticised as having being developed in a haphazard manner for ideological reasons which incorporate disenchantment with the 'medical model' including methadone prescribing (Butler, 2011). An external review of this professional group in Dublin conducted by Vellman et al. (2001) noted questionable levels of accountability, professional standardisation and use of evidence-based practice amongst this profession. Subsequently, the recommendations from this report were largely ignored despite an explicit observation in the report that many preceding reports had also been ignored (Butler, 2011).

Developing an understanding of the dynamics of treatment systems and the workforce in Irish addiction services would have benefits for the addictions field and may have a wider application in the Irish Healthcare system. Three key government documents outline a systemic and long-term approach to the development of Irish healthcare services (Health Service Executive, 2021, Government of Ireland, 2017, Department of Health, 2017b) Slaintecare is the key policy document which sets out reform of the national health service in Ireland (Government of Ireland, 2017). This document commits government bodies such as the health service executive and the department of health to a workforce development strategy which includes recruitment and retention the correct skill mix of staff, provision of training and career development and creating a healthy sustainable workforce. 'Working together for health' is another key government workforce strategy which commits to creating a sustainable workforce for the Irish health service (Department of Health, 2017b). The current National Service Plan for Irish health services places significant emphasis on the development of workforce and the organisations in which they work (Health Service Executive, 2021). However, it is not clear how far any of these policy approaches currently extend to substance misuse services, where a large proportion of services are provided by the voluntary sector.

The current National Drugs Strategy (Department of Health, 2017a), previous national drugs strategies, and the development of the National Rehabilitation Framework (Doyle and Ivanovic, 2009) in conjunction with the establishment of the National Addictions Training Programme in 2006 ought to provide mediums through which the workforce in drug treatment services could be developed. However, as is the case internationally, the provision of a high-quality response to a significant public health issue in Ireland has been hampered by the lack of a cohesive and

systematic approach to workforce and organisational development in this sector. This may be partially attributable to diminishing resources as well as cultural norms, but as this document has identified, the case for the provision of a high quality, well-resourced and effective treatment system is significant both in Ireland and abroad.

There is also broad agreement internationally that we need to identify treatment factors and process which affect patient outcomes (Van de Ven et al., 2020, Kelly et al., 2018). For example, organisational instability has been compounded by staff turnover and poor retention and this has affected the delivery of effective services (Garner and Hunter, 2014, McLellan et al., 2003). This challenge is reflected, at least anecdotally, in the Irish context. Simpson and Dansereau (2007a) suggest that it is ironic that treatment services typically demonstrate the same deficiencies that they address in service users; low levels of motivation, lack of cognitive focus and weak discipline. In recognition of these challenges, there has been a growing body of research in the substance misuse field and beyond aimed at conceptualising, measuring and describing *how* organisational systems work and *how* they can improve service delivery (Holt and Vardaman, 2013, Landrum et al., 2012, Broome et al., 2007, Greener et al., 2007). No studies of this nature have been conducted in Ireland. Over two decades ago Marsden (1998) argued that researchers of substance misuse services have underutilised organisational theories in their investigation of programmes when compared to other sectors of healthcare and this point is still relevant today.

Researching this area is not without challenges. Ethridge and Hubbard (2000) suggested, the variables involved in researching workforce development are numerous, complex and are seemingly beyond the reach of all but the most highly resourced research. However, it is also arguable that it is both difficult and unnecessary to measure all these variables in order to measure

the effectiveness of a workforce development strategy. The ultimate success of a cohesive workforce development strategy can be measured effectively at the interface between the organisation and the individual (Jacobs and Hawley, 2009).

In addiction treatment services, organisational functioning and related treatment delivery factors have been shown to be positively correlated with the dissemination of evidence based practice (Roman et al., 2010, Squires et al., 2008, Fuller et al., 2007, Miller et al., 2006) and service user outcomes in treatment (Simpson et al., 2009, Broome et al., 2007, Simpson et al., 2007, Gossop et al., 2003, Heinrich and Lynn, 2002). It is arguably, the most efficient approach, to measure the success of an effective workforce development strategy at both an individual and organisational level at the important interface between the system and service user (Jacobs and Hawley, 2009). Many of the more recent and important studies of addiction treatment organisations, which have examined how organisations function effectively, have been influenced by organisational psychology and more specifically the school of organisational development. These studies have specifically examined organisational readiness for change, a multi-dimensional concept, as a measure of how effectively an organisation functions (Simpson et al., 2009, Lundgren et al., 2013).

2.4 Origins of the study of organisational development & organisational theory

Organisational behaviour is ‘a field of study that investigates the impact that individuals, groups and structure have on behaviour within organisations for the purpose of applying such knowledge towards improving an organisations effectiveness’ (Robbins et al., 2013,p8). The study of organisational behaviour includes influences from the disciplines of sociology, psychology and management (Kozlowski, 2012, Morley et al., 2004). Management theories which initiated the

study of organisational behaviour did not begin to emerge until the 1700's and 1800's when societies in Europe and the US were dramatically transformed from agrarian to largely industrial societies (Koppes Bryan and Vinchur, 2012, Morley et al., 2004). In the early 1900's, industrialists such as Fredrick Taylor and Henry Ford formulated work practices and developed operational systems which sought to optimise profits.

Through this process, Henry Ford discovered that improvements in working conditions and pay directly increased worker productivity (Morley et al., 2004). Elton Mayo conducted the ground-breaking Hawthorne experiments in the 1920's from which he argued that the social and emotional well-being of workers and group dynamics have an important and positive relationship with productivity (Koppes Bryan and Vinchur, 2012, Morley et al., 2004). Mayo's findings gave birth to the human relations school in the study of organisations, which in contrast to the functionalism of the scientific management or the Fordism approach, emphasised a psychological approach towards managing organisations which is viewed as more person-centred and supportive than controlling (Morley et al., 2004).

During the first half of the 20th century, academics such as Kurt Lewin in particular but also Rensis Likert and Elton Mayo are accredited with developing the study of organisational behaviour, which was influenced by sociological and psychological perspectives and often focused on human relations (Kozlowski, 2012, Morley et al., 2004). Lewin, Likert and Mayo are also amongst those credited with initiating the development of a field of organisational psychology known as Organisational Development [OD] (Ford and Foster-Fishman, 2012, Cummings and Worley, 2005). Organisational Development is defined as 'a system-wide application and transfer of

behavioural science knowledge to the planned development, improvement, and reinforcement of the strategies, structures and processes that lead to organisational effectiveness' (Cummings and Worley, 2005,p1).

From its inception in the 1920's, the Organisational Development approach has traditionally espoused democratic values that emphasise a participative approach to organisational change and development which should account for human emotions and interpersonal dynamics (Burnes and Cooke, 2012). Although the foundations for Organisational Development developed from the 1920's onwards, it was not until the 1960's in the context of challenges to authoritarianism such as the civil rights movement in the US, that Organisational Development gained significant influence in industry (Burnes and Cooke, 2012). In the face of emerging globalisation and competition in the 1970's and 1980's, an era described by Burnes and Cooke (2012,p1409) as being about 'profit not people', a consensus emerged against the democratic, inclusive and participative Organisational Development approach which was viewed as too cumbersome, in favour of a more timely, functionalist and profit driven approach to change and this shift in emphasis was driven by practitioners of Organisational Development and not academics (Burnes and Cooke, 2012).

In recognition that the human relations aspect of organisations cannot and should not be overlooked, the 1990's to present day has seen a renewed academic and practitioner renaissance in Organisational Development which has seen the development of new approaches and research (Burnes and Cooke, 2012). Today, Organisational Development is concerned with organisational change and improving quality of work life and overall performance, its holistic approach towards

organisations views these components as being inextricably linked (Cummings and Worley, 2005). Established and emerging post-modern approaches argue that the acknowledgement of the unique context of each organisation is most important and that organisations and the context in which they operate is diverse and infinitely complex (Crowther and Green, 2004). The study of OD now incorporates a plethora of activities involving a diverse range of professional disciplines but this has contributed to some conceptual ambiguity around OD (Ford and Foster-Fishman, 2012).

The wide range of literature on the subject of organisational change has also been described as a constant challenge to investigators who prefer frameworks and structure (Weick and Quinn, 1999). While it can be argued that the boundaries of OD are somewhat unclear, Burnes and Cooke (2012) argue that OD remains the most universally applicable and dominant approach to organisational change. The tensions between the human relations and functionalist approaches to organisational change are pervasive and these continue to influence contemporary discourse regarding organisational development (Crowther and Green, 2004). It could be argued that these tensions have a basis in the conflict between socialist and capitalist ideologies.

2.5 Theoretical and conceptual interpretations of the organisational entity

An organisation is simply defined as 'An ongoing group of individuals who are formally recognised as associated with the group, and with a common set of goals which they are systematically structured to accomplish' (Griseri, 2013,pg11). Within this definition, physical and material infrastructure can also be considered as part of the organisation. Literature related to organisational development offers a broader vision of the organisational entity and acknowledges the systemic nature of organisations in respect of the interdependence of their individual

components which are influenced by external factors (Kozlowski, 2012, Cummings and Worley, 2005). One of the foundation theories for organisational development is general systems theory which was originally developed by the biologist Ludwig Van Bertalanffy in 1968 (Von Bertalanffy, 2013). This theory has been identified as being of importance for understanding not only how organisations work but also how they change (Ford and Foster-Fishman, 2012, Morley et al., 2004).

General systems theory has its origins in the natural sciences and proposes that in any system all individual phenomena are interdependently linked from entire systems or societies right down to atomic level and that to examine singular phenomena on its own, fails to encapsulate the whole (Von Bertalanffy, 2013). Thus, a systems approach towards organisations would focus on the whole organisation and its structures. Ford and Foster-Fishman (2012) identify four implications for viewing organisations from a systems perspective:

1. Issues, incidents and forces are viewed not as isolated phenomena but in relation to other issues incidents and forces.
2. There is an analysis of events in terms of multiple causation.
3. One part of a system cannot be changed without influencing other parts of the system.
4. Change must occur by changing a system and not just its component parts.

Including some attributes of general systems theory, Weick (1976) developed another seminal theory of organisations and first used the term *loosely coupled systems* to conceptualise organisations as collectively responsive units but with individual elements that retain their unique

identity and physical separateness. Hollenbeck and Spitzmuller (2012) utilised the concept of loosely coupled systems (Weick, 1976) to explain the paradox of individuals being separate autonomous units but simultaneously part of a team or larger unit. Hollenbeck and Spitzmuller (2012) described four types of structural interdependences which define teams, which can be a part of, or constitute entire organisations and these structures relate to the sharing of; task allocation, decision making, reward and communication.

The concept of loosely coupled systems was later developed and refined by Orton and Weick (1990) where they accepted that the original theory by Weick (1976) was ambiguous but argued that this was necessary given the complexity and diversity of organisations. Orton and Weick (1990,p216) explain that definitions of organisations normally consist of at least two components: 'a source of order which consolidates, unifies, or coalesces diverse elements or fragments' or 'elements of or fragments, which are consolidated, unified or coalesced by a source of order'. Elements of organisations such as individuals, sub-units, hierarchical levels, or ideas can either be loosely or tightly coupled and should be understood using this perspective (Orton and Weick, 1990). Through scoping the literature related to loosely coupled systems, it was identified by Orton and Weick (1990) that loosely coupled systems and tightly coupled systems share different characteristics, but they acknowledge that the debate over the effect of loose coupling in organisations is pervasive.

Due to their disconnected nature, more loosely coupled organisations may be more buffered against the spread of negative influences and can also be more adaptable to change as one system within the organisation can be changed quickly with a view to influencing the other systems (Orton

and Weick, 1990). Conversely, Orton and Weick (1990) identify that tightly coupled systems can be more adaptable to change as their interconnectedness means they are more conducive to system wide change than loosely coupled systems. In conclusion, Orton and Weick (1990) accept that interpreting organisational structures is complex and urge careful consideration of individual organisational structures in order to apply the theory of loosely coupled systems effectively. Additionally, both Orton and Weick (1990) and Von Bertalanffy (2013) theories frame organisations as dynamic entities where ongoing change is a consequence of their existence.

2.6 Organisational change: theoretical and conceptual interpretations

Change is considered to be the most important factor in successful contemporary organisational management (Crowther and Green, 2004). Across a broad spectrum of organisations, the ability to innovate and change are seen as imperative, not only for organisational success but also for survival (Holt and Vardaman, 2013, Armenakis et al., 1993). Change is instigated in organisations by a variety of factors. Crowther and Green (2004) identify three distinct drivers of change in organisations:

1. Economic; recession or budgetary reductions.
2. Social causes; political or policy changes, cultural shifts or changes in health behaviours.
3. Technological changes; new organisational process, new evidence.

Organisational change can be described as any modification in organisational structure, composition or behaviour (Bowditch et al., 2008) and changes can generally be described as *innovative*, which involve more incremental change, or *radical*, which involve larger changes

(Morley et al., 2004). Porras and Robertson (1992) classified change based on the level of planning involved and the significance of the change and identified four types of change where innovative change can also be referred to as *first order change* while radical change is often referred do as *second order change*.

The four types of organisational change described by Porras and Robertson (1992) are;

1. *Developmental change*-planned first order change.
2. *Transformational change*-planned second order change.
3. *Evolutionary change*-unplanned first order change.
4. *Revolutionary change*-unplanned second order change.

The type of change and the context of organisational change is important as it influences whether or not a change will be successful implemented or not (Rafferty and Simons, 2006). Whatever the type or stimulus for a given change, if business and public sector organisations are to respond effectively to rapidly changing and turbulent environments then engaging with ongoing change and innovation is essential (Holt and Vardaman, 2013, Cinite et al., 2009). In healthcare, the context in which organisations operate is also dynamic and systems must constantly change to meet demands on resources, adapt to new practices and respond to significant shifts in policy (Bazzoli et al., 2004). While the demands and conditions of change are multi-faceted, an organisation's ability to change is considered to be fundamental to the life of the organisation itself (Holt and Vardaman, 2013).

The difficulties in completing successful changes in organisations are significant. Organisations, like individuals, are naturally resistive to change (Pomare et al., 2019). The failure rate in implementing change in organisations has been generally accepted as being in the region of 70% (Cartwright and Schoenberg, 2006, Washington and Hacker, 2005) although it has been identified that there is a lack of empirical evidence to support this figure (Hughes, 2011). More specifically, in the healthcare context, Jacobs et al. (2015) identified that, depending on how changes are measured, the failure rate for implementing change in organisations ranges from 30% to 90%. This indicates that, even at the lower estimate, there is a significant failure rate in organisations response to change.

Changes can happen to an organisation for a multitude of reasons, but organisational development is generally concerned with planned change. Approaches in organisational development rely on theories of change as organisational development occurs (Cummings and Worley, 2005). There are a plethora of theories and concepts relating to organisational change but many of these are influenced and developed from fundamental theories of change such as Lewin's 3-step planned change model (Ford and Foster-Fishman, 2012). Lewin's work been described as the seminal 'yardstick' on upon which all later studies of organisational development are based (Burnes and Cooke, 2012).

Lewin (1958) described a three-stage model of planned change (Figure 2. 3). He regarded a particular behavioural cluster at any moment in time as resulting from two groups of forces; those striving to maintain the status quo and those striving for change. Lewin described equality amongst these forces as a quasi-stationary equilibrium and suggested disparity between these forces resulted

in change. Lewin suggested that change is more successful if the focus is on modifying the status quo as opposed to increasing the forces of change. *Unfreezing* is accomplished by providing information to develop discrepancy between the status quo and the desired change. *Moving* alters the organisational behaviour and develops new behaviours and values through a process. *Re-freezing* is where the desired behaviour stabilises and becomes a new organisational norm (Cummings and Worley, 2005).

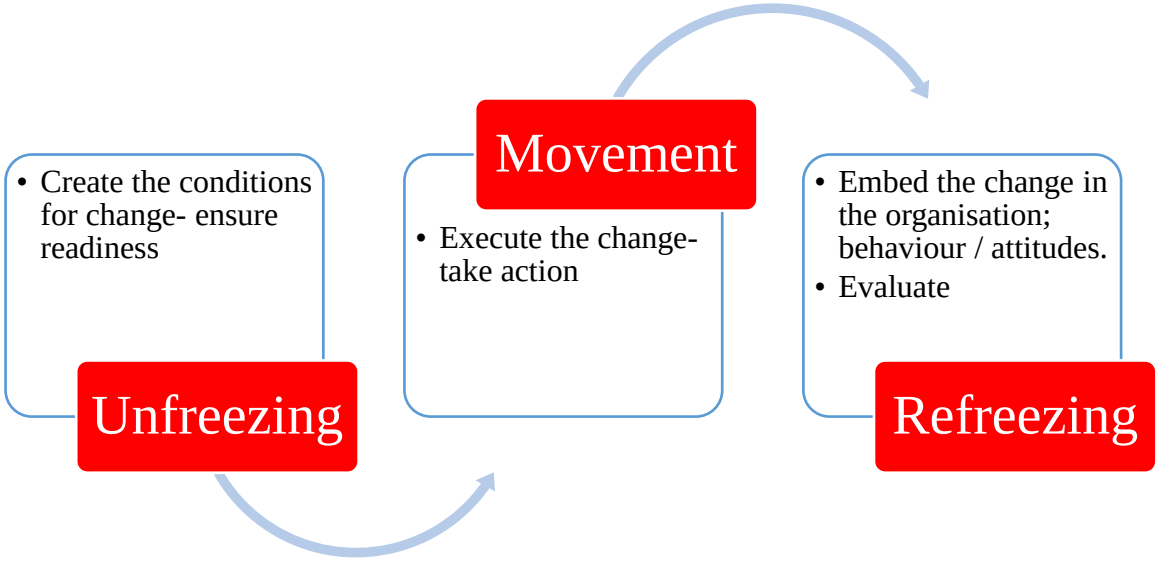


Figure 2. 3 Lewin (1958) Planned change model

Lewin's 3-stage model of change is important, and it is cited by a multitude of contemporary authors when describing the nature of change (Soumyaja et al., 2015, Blackman et al., 2013, Stevens, 2013, Armenakis et al., 1993). Contemporary change theories have adopted and altered this theory but its fundamental basis remains intact. Cummings and Worley (2005) suggest that this model can be effectively integrated into a general model of planned change which is testamount to the flexibility of this model but this observation arguably reflects that Lewins model

lacks precision. The developments from this concept of change have contributed significantly to the understanding of organisations and how we think about change. However, many of these interpretations have been described as limited in how they can explain organisational change which remains a complex phenomena (Ford and Foster-Fishman, 2012). Further expansion on Lewin's theory and how it relates to this study, are explored in Chapter 4 [section 4.3] of this thesis.

Recognising that organisational and systemic factors inhibited the transfer of training into practice at levels of 80-90% and drawing on theoretical contributions and industrial research, Simpson (2002) developed a process model for programme change in substance misuse treatment services (Figure 2. 4). This model is not dissimilar to the Lewin (1958) 3 stage model of change but it incorporates a wider range of factors which influence change such as motivation and institutional resources which can influence *readiness for change* similar to the concept of *unfreezing.*

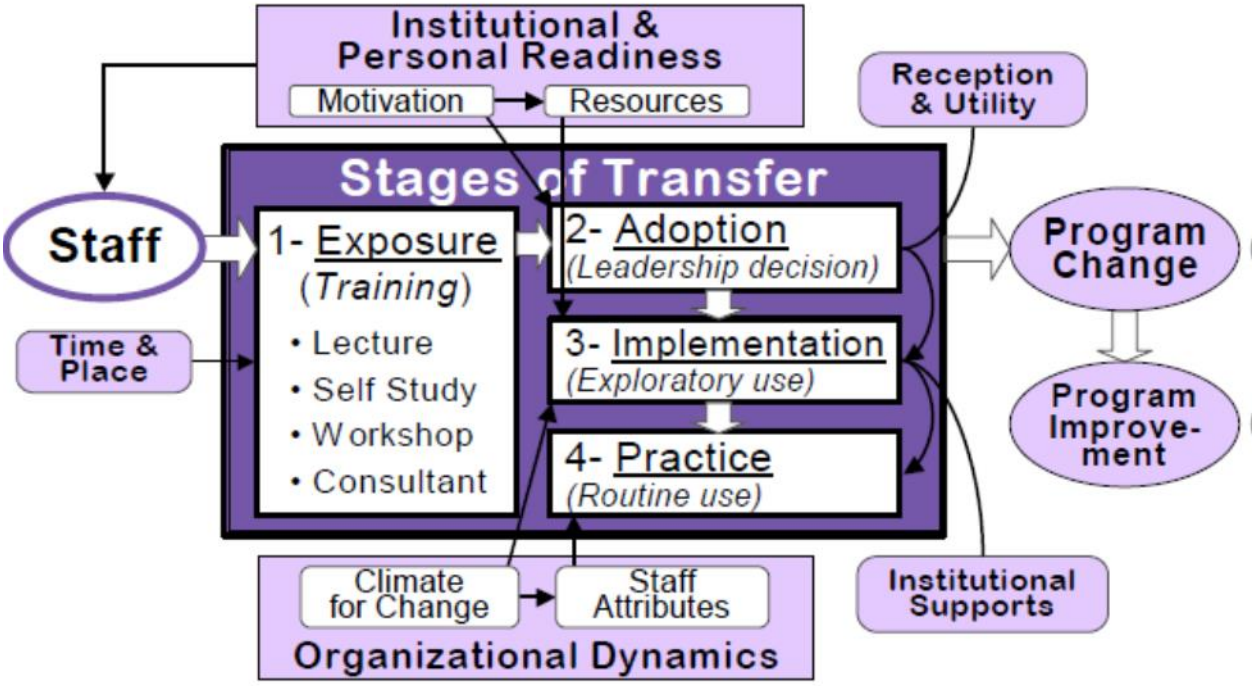


Figure 2. 4 Texas Christian University Planned change model for transferring research into practice [permission obtained from author]

Within this concept Simpson (2002) placed particular emphasis on the importance of *readiness for change* and this aspect has become the focus of many subsequent studies (Simpson et al., 2009, Rampazzo et al., 2006, Lehman et al., 2002). Readiness is a psychological phenomena, Armenakis et al. (1993,p681-682) describe the concept of readiness as being similar to the *unfreezing* concept described by Lewin (1958) and define it as 'the cognitive precursor to the behaviours of either resistance to, or support for, a change effort'. Readiness to change signifies the intentions of change target members regarding their needs and capabilities to implement organisational change and is comrpised of beliefs, attitudes and intentions (Armenakis and Fredenberger, 1997). The term readiness is preferred to the term resistance as readiness is a term which is more consistent with the ethos of change agents and implies a postive approach to contextualising and motivating for change (Armenakis and Harris, 2009).

Theorists consider the concept of readiness to be important as the psychological phenomena of readiness or resistance to change has been a subject of over 90% of the conceptual work on change attitudes (Bouckenooghe, 2010). Schein (1999,1979) argued that the reasons why so many organisational change efforts fail is that there is insufficient unfreezing or planning and Kotter (1996) suggests that over half of change efforts fail due to the failure to establish sufficient readiness for change. Examination of the readiness concept is important as the failure rate for planned organisational change is high and this has been widely attributed to orgainsations failure to establish sufficient readiness to change (Rafferty et al., 2013, Vakola, 2013). Conversely, when readiness to change is high, organisational members are more likely to show initiative, work harder and co-operate, which in turn results in more effective implementation and continuation of change (Holt and Vardaman, 2013, Weiner et al., 2008).

2.7 Organisational Readiness to change; characteristics, antecedents & consequences

Historically, much of the focus has been on individual readiness as distinct from organisational readiness and in order to move beyond this, Armenakis et al. (1993) suggest that contextual and social phenomena must also be considered in relation to readiness as they are important. Today, the readiness to change concept is typically examined from both an individual and organisational perspective (Holt and Vardaman, 2013). According to Holt and Vardaman (2013), individual factors involve the attitudes, beliefs and intentions of individuals towards change and while organisational factors incorporate individual factors, factors such as collective commitment and shared beliefs in both organisational capabilities and trust in leadership are also important. Recent approaches towards conceptualising and measuring organisational readiness have ackowledged this and have adopted a multi-level approach to readiness which has incorporated

micro (individual) meso (group) and macro (organisation) readiness as interdependent entities (Blackman et al., 2013, Rafferty et al., 2013, Vakola, 2013).

In the business environment, in healthcare and more specifically in substance misuse treatment, the health, motivation and ability to respond to change or '*unfreeze'* has been contextualised as *Organisational Readiness to Change* or ORC (Holt and Vardaman, 2013, Weiner et al., 2008, Jones et al., 2005, Lehman et al., 2002). ORC is widely recognised as one of the most important concepts regarding the support and success of organisational change (Weiner et al., 2008, Armenakis et al., 1993) and has been applied successfully to measure organisatioanl functioning as a multi-dimensional concept (Simpson et al., 2009). Ford and Foster-Fishman (2012) identify *organisational readiness to change* (ORC) as one of three key advances including *change capacity* and *organisational learning* which have taken place in study of organisations in the previous decade. These three advances provide important insights into the assessment, planning and delivery of change efforts irrespective of the organisational strategy (Ford and Foster-Fishman, 2012).

While a consensus has been reached that ORC is of paramount importance in terms of the overall change process, there is significantly less clarity around its conceptualisation and measurement (Stevens, 2013, Vakola, 2013, Ford and Foster-Fishman, 2012). Much of the recent literature has focused on clarification of the readiness concept prompting a critique from Stevens (2013,pg352) that 'there are nearly as many different conceptualisations as there are researchers studying the phenonmenom'. Clarifying the phenomenon of organisational readiness has also been complicated as there is minimal consistency in conceptual terminology used to describe it (Stevens, 2013,

Weiner et al., 2008). Readiness has also been conceptualised as a process as opposed to a state based concept (Stevens, 2013, George and Jones, 2001) and this can confuse clarification of the concept further as the antecedents, characteristics and consequences of ORC can become interchangeable throughout a dynamic process.

Ford and Foster-Fishman (2012) describe the emergence of three approaches towards describing and measuring ORC in the literature; *a manifest approach*, *a developmental approach* and a *content domain approach*:

1. *A manifest approach* conceives readiness as a general belief in the intention and possibility of change. The objective of this approach is to directly measure how pervasive this belief is within an individual employee or in an organisation. It provides a straightforward means of analysing employee readiness through direct questioning but according to Ford and Foster-Fishman (2012) over simplifies the concept of readiness.

2. *The development approach* is based on DiClemente and Prochaska (1998) transtheoretical model of change. which was developed for understanding change in addictive behaviour. This model of change readiness is based on five stages: pre-contemplative, contemplative, preparatory, action and maintenance. This theory is applied by assessing an individuals readiness to change so that an intervention can be tailored to meet their needs. Within psychology literature, individuals readiness to change has often been framed in this way (Holt and Vardaman, 2013).

3. *The content domain approach* views organisations as multi-level constructs where for example Holt et al. (2007) defined readiness as being influenced by; *content*- what is being changed, *process*- how the change is being implemented, *context*-circumstances under which change is taking place, *individuals*- attributes of the individuals involved in the change. Of the three approaches, this approach is described by Ford and Foster-Fishman (2012) as being the most appropriate and sufficiently complex approach to describing organisational change readiness. The content domain approach is reflective of a more contemporary and widely accepted interpretation of ORC (Holt and Vardaman, 2013, Vakola, 2013, Simpson and Dansereau, 2007a)

Organisational readiness and individual readiness have been described in different ways. Armenakis et al. (1993,p681) describe individual readiness as being comprised of 'beliefs, attitudes, and intentions regarding the extent to which changes are needed and the organisation's capacity to successfully undertake those changes'. Organisational readiness has been defined as 'the extent to which organisational members are psychologically and behaviourally prepared to implement organisational change' (Weiner et al., 2008,p381) but this definition does not account for ORC as a multi-level construct. ORC has been described as a 'two-dimensional construct which refers to organisational members motivation and capability to implement intentional organisational change' (Weiner et al., 2008,p424). These two dimensions can be described in colloquial terms as individuals and/or groups being *willing* and *able* to implement change (Weiner et al., 2008).

In addition to this, when measuring ORC, a number of researchers and theorists who have taken a *content domain* approach have incorporated elements such as individual and organisational

motivation and efficacy as well as leadership (Attieh et al., 2013, Armenakis and Harris, 2009, Holt et al., 2007, Lehman et al., 2002, Armenakis and Bedeian, 1999). Holt and Vardaman (2013) strongly argue that psychological readiness is ineffective without organisational capability and vice versa which suggests interdependence at different levels. This interpretation is complimentary to the conceptualisation of organisations as *loosely coupled systems* (Orton and Weick, 1990) or *general systems theory* (Von Bertalanffy, 2013) and re-enforces thinking about organisations as entities comprised of interdependent systems and sub-systems.

Utilising the literature on conceptual frameworks and theoretical models, Attieh et al. (2013) conducted a systmatic review and developed a complex concept map on ORC, more specifically related to knowledge transfer in healthcare. The concepts identified by Attieh et al. (2013) share many similarities with Armenakis and Harris (2009) and other theorists. In their literature search, Attieh et al. (2013) retrieved only one theory developed by Weiner (2009) along with 9 conceptual frameworks on ORC. In this seminal paper, Weiner (2009,p1) takes a *content domain* approach and perhaps provides the most complete definition of ORC by describing it as 'a shared psychological state in which organisational members feel committed to implementing an organisational change and feel confident in their ability to do so'. Weiner's theory also suggests that ORC is a multi level construct but also a multi-faceted one and he argues that there is no single optimum approach towards increasing ORC (Weiner, 2009).

In a comprehensive theoretical review, Rafferty et al. (2013) characterise readiness to change as being comprised of both cognitive and affective components in an individual and collective context. The cognitive components described by Weiner (2009) and Armenakis and Harris (2009)

are not dissimilar and are outlined below. Weiner (2009) describes a theory (Figure 2. 5) which includes three key determinants and charactaristics of ORC:

1. *Change valence*; the author draws on motivational theory and suggests that change commitment is a function of change valence. Organisational members may value a change for different reasons but this is not relevant in determining change valence or change commitment. The most important factor is that individuals value the change enough to commit to its implementation.

2. *Change efficacy*; here Weiner (2009) draws on social cognitive theory and proposes that change efficacy is a function of individuals appraisal of three important determinants of implementation capability: task demands, resource availability and situational factors such as sufficient time availability or the internal political environment. When there is a collective, favourable appraisal of these three factors change efficacy will be high. Here, Weiner (2009) argues that this view contributes to the development of *organisational readiness to change* theory by specifying that there is a strong relationship between structural and psychological constructs of readiness to change.

3. *Contextual factors*; Weiner (2009) identifies contextual factors which determine organisational readiness such as organisational culture which can determine if a change will be valued, organisational policies and procedures which can effect members appraisal of resources and task demands finally past experience of change, e.g. was previous change beneficial and was it successfully implemented?

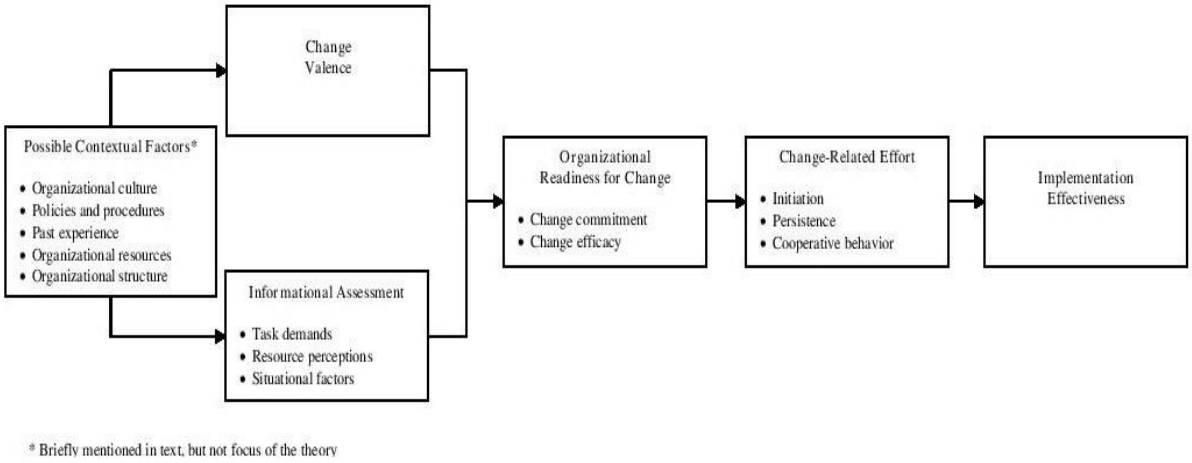


Figure 2. 5 Weiner (2009, p4) Determinants and Outcomes of ORC [permission obtained from author]

Weiner's theory has had limited application within the empirical literature, but when the theory has been applied in qualitative inquiry, it has been considered useful in categorising contextual, organisational and psychological factors which determine levels of readiness (Nilsen et al., 2018). Not dissimilar from Weiner (2009), and building upon previous readiness concepts, Armenakis and Harris (2009), based on their experience of change events, field research, and reviewing the literature, support the argument proposed by Weiner (2009) that readiness to change is a multi-faceted construct where ORC is supported by five key change beliefs or cognitive constructs:

1. *Discrepancy*; the belief that change is needed
2. *Appropriateness*; that the proposed change is correct for the situation
3. *Efficacy*; the belief that the change can be implemented
4. *Principal support*; the belief that formal leaders are committed to sustaining the change
5. *Valence*; that there is something benefical for the individual and organistion if the change is executed

While it has been argued that the empirical evidence to support the implications for ORC needs to be expanded, observations from experts and managers in the field show that these assertions are substantiated in practice (Weiner et al., 2008).

Inclusion of the affective or emotional disposition of employees towards change is an important characteristic of readiness and is strongly related to motivation, attitude and intentions towards change (Rafferty et al., 2013, Vakola, 2013). Holt et al. (2007,pg 235) define change readiness as 'the extent to which an individual or individuals are cognitively and *emotionally* inclined to accept, embrace, and adopt a particular plan to purposefully alter the status quo'. Research has shown that postitive emotions or attitudes towards change are vital in implementing change and achieving organisational goals (Oreg et al., 2011).

Determining the antecedents of ORC is not without complexity. While many authors have sought to identify specific antecedents for readiness to change (Drzensky et al., 2012, Soumyaja et al., 2015, Rafferty et al., 2013), other authors have termed these 'predictors' (Jones et al., 2005) 'enablers' (Blackman et al., 2013) or 'determinants' (Weiner, 2009). There is also a very close and arguably an inseperable and sometimes interchangeable relationship between some of the characteristics of ORC and its antecedents and especially so if we interpret ORC as an ongoing process. Process models which view ORC as a dynamic and changing concept, also suggest that antecedents or determinants for ORC can vary over time (Stevens, 2013, George and Jones, 2001). Rafferty et al. (2013) describe individual and organisational cognitive change readiness as an antecedent for overall readiness to change, while cognitive change readiness is described as a characteristic of ORC in other discussions (Vakola, 2013). However, following review of

theoretical and empirical reserch in order to clarify the antecedents of readiness to change, Rafferty et al. (2013) have classified these antecedents into three categories:

1. *External organisational pressures*: government policy, new technologies or even external group membership.
2. *Internal context enablers*: communication, change participation and leadership.
3. *Individual or personal and group characteristics:* Individual characteristics included; self-efficacy, personality traits and personal values while group characteristics included shared perceptions about change process, the level of group level involvement, interpersonal trust, levels of positive affectivity within the group.

In a seminal paper, Armenakis and collegues (1993) identified that one of the most important factors in influencing change readiness is the change message and this has been supported by subsequent authors (Stevens, 2013, Rafferty and Simons, 2006, Armenakis et al., 1999). Specifically, Armenakis et al. (1993) identified that the change message should adress the need for change, as in the discrepancy between the desired and end state, the appropriateness of this change and the individual and collective capabilities of those affected by the change.

The change message should also offer support and emphasise the benefits of changing the status quo (Armenakis et al., 1999). How this message is communicated is also important as increased change success is likely to be based on rich and accurate information (Weiner, 2009). An approach is where increasing readiness as opposed to reducing resistance is also emphasised. In determining high levels of ORC, ‘want to’ motives are far more powerful than ‘have to’ motives and the most

likely outcome of ensuring ORC is high is that change will be implemented, but that this is subject to the change itself being appropriately designed (Weiner, 2009).

Research indicates that the size of the change is also important as typically change readiness is higher for incremental change than radical change and the approach should be tailored accordingly (Rafferty et al., 2013). The change message and how it is delivered is instrumental in influencing beliefs, attitudes and intentions in respect of the change dimensions identified by Armenakis and Harris (2009); discrepancy, appropriateness, efficacy, principal support and valence. Active participation and involvement by staff in implementing and planning change is also typically viewed as being of paramount importance in ensuring high individual and organisational readiness (Soumyaja et al., 2015, Rafferty et al., 2013, Armenakis et al., 1993).

Researchers have shown positive corrleations between employees physical and mental health and resulting absenteeism and active particpation in workplace change (Terry and Jimmieson, 1999). This is not always important however and can be subject to the type of change proposed, as a study by Rafferty and Simons (2006) revealed that in relation to corporate transformational change, participation in change was not seen as important by employees while trust in leadership and self-efficacy was. The personal charactaristics of individuals are also important. In the organisational change context, Oreg et al. (2011) identified that personal dispositions such as openess to change, self-esteem, self-efficacy and postive affectivity were antecedents of postive attitudes towards change.

Situational characteristics such as levels of peer to peer trust and trust in management, organisational commitment, opportunities to participate in the process of change and perceived impact of change, have also been identified as having an impact on change recipients attitude towards change (Oreg et al., 2011). Other examples of antecendents for ORC are; the degree to which individuals identify with an organisations values (Drzensky et al., 2012), change agent attributes (Armenakis et al., 1993), a positive history of organisational change (Bernerth, 2004). This list of antecedents is not exhaustive.

Over time, a multitude of instruments have been developed by researchers in various fields to measure organisational readiness to change (Gagnon et al., 2014). A systematic review by Gagnon et al. (2014) revealed that tools developed to measure ORC in substance misuse services by Lehman et al. (2002) have been found to have the highest instrument validity of all those reviewed. Focusing on substance misuse services and using the tool developed by Lehman et al. (2002), greater ORC has been strongly associated with better service user satisfaction and engagement (Broome et al., 2007, Greener et al., 2007, Simpson et al., 2007), and improved dissemination of training and evidence based treatments into practice (Lundgren et al., 2013, Lehman et al., 2012b). It is also argued that measurement of organisational readiness can be conducted as a stand alone intervention in order to identify areas for organisational improvement (Courtney et al., 2007, Rowan-Szal et al., 2007, Simpson and Dansereau, 2007b, Heinrich and Lynn, 2002). More specifically, instruments such as the Organisational Readiness to Change Questionnaires (Lehman et al., 2002) and the Workforce Practice Questionnaire (Addy et al., 2003) have been designed and validated to measure organisational functioning in addiction services.

The organisational readiness to change questionnaires (ORC) (Lehman et al., 2002) were developed through the Texas Christian University in the United States and there is a separate but overlapping questionnaire for staff and supervisors. Both questionnaires examine organisational functioning in a number of domains: motivation for change, adequacy of resources, staff attributes and organisational climate. These questionnaires have been rigorously validated and have been used in a wide range of studies which have examined the effects of organisational functioning on both technology transfer or dissemination of evidence based practice (Lundgren et al., 2012, Fuller et al., 2007) and measures related to patient outcomes such as retention in treatment and increased satisfaction with counsellors (Greener et al., 2007, Simpson et al., 2007). The ORC tools can also be used to measure the overall functioning of organisations with a view to assessing and improving organisational change (Courtney et al., 2007).

2.8 Conclusion

This discussion has demonstrated that organisations are an important component of workforce development and represent the interface between policy and practice where the impact of policy and planning implementation can be adequately maesured. There is a relationship between organisational theory and theories of change which can deepen our understanding of how organisations work. In this context, one of the most important dimensions of change is organisational readiness to change. Theoretically, perspectives and concepts of organisations are multi-faceted and this is reflected in theories of ORC. In summary, ORC is a complex multi-dimensional construct which include individual and structural factors at a varity of levels (Holt and Vardaman, 2013).

Healthcare and other organisations need to be ready to adapt to changing events and rapidly changing environments (Attieh et al., 2013). Creating multi-level readiness to change is of paramount importance and may address crucial phenomena such as resistance to change (Vakola, 2013). Expanding our understanding of readiness which incorporates the multi-dimensional and multi-faceted nature of the concept, will help researchers to develop a more accurate and meaningful understanding of how organisations and individual team members can innovate, excel and ensure their ongoing survival (Holt and Vardaman, 2013). Utilising ORC measures could help us to further understand the impact of changes in policy, funding and workforce structures, specifically in relation how effectively organisations adopt new innovations or engage service users (Lehman et al., 2012b, Greener et al., 2007).

In healthcare, researchers have only recently began to apply models of ORC and there is still a lack of methodological detail around how theoretical perpectives, frameworks and models can be operationalised (Attieh et al., 2013). More empirical research needs to take place to examine the relationship between the interdependent and complex variables related to ORC (Vakola et al., 2013). More consensus around terminology and concepts would also be beneficial for researchers. While there is widespread agreement that ORC is important, there is wide variance on how ORC is interpreted and which influencing factors are most important.

Chapter 3: Organisational readiness to change and its relationship with innovation adoption and client outcomes in substance misuse treatment services: Reviews of the Empirical Literature[8,9,10]

There are a number of studies which explore the relationship between ORC and how successfully substance misuse treatment services can adopt to change, and also influence client outcomes (Simpson et al., 2009, Simpson et al., 2007). To date, no reviews have been conducted to collate and critically analyse the results from these studies. In order to address this gap, two systematic reviews were conducted, one to explore the relationship between ORC and innovation adoption (Kelly et al., 2017)[9] and the other to explore the relationship between ORC and client outcomes (Kelly et al., 2018)[10] . Both of these reviews are discussed in this chapter.

3.1 A systematic review of the relationship between staff perceptions of organisational readiness to change and the process of innovation adoption in substance misuse treatment programmes

3.1.1 Significance and Aim

Over the last two decades, treatment programs have been challenged by diminishing resources while simultaneously, the scientific foundation on which treatment is based has changed substantially, and the range of substances available and patterns of use have broadened significantly (Barlow, 2010, Simpson and Dansereau, 2007a, Roche, 2001). The context in which

[8] Scoring guides for the ORC, SOF and client engagement measures can be located here: https://ibr.tcu.edu/forms/tcu-core-forms/

[9] KELLY, P., HEGARTY, J., BARRY, J., DYER, K. R. & HORGAN, A. 2017. A systematic review of the relationship between staff perceptions of organizational readiness to change and the process of innovation adoption in substance misuse treatment programs. *Journal of Substance Abuse Treatment,* 80**,** 6-25.

[10] KELLY, P., HEGARTY, J., BARRY, J., DYER, K. & HORGAN, A. 2018. The relationship between staff perceptions of organisational readiness to change and client outcomes in substance misuse treatment programmes: A systematic review. *Journal of Substance Use,* 23**,** 223-239.

healthcare organisations operate is dynamic and systems must constantly change to meet demands on resources, adapt to new practices, and respond to significant shifts in policy (Bazzoli et al., 2004). Whatever the nature or stimulus for a given change, if organisations are to respond effectively to rapidly changing and turbulent environments, then engaging successfully with ongoing innovation is essential (Holt and Vardaman, 2013, Cinite et al., 2009, Armenakis et al., 1993).

Organisational change can be described as any modification in organisational structure, composition or behaviour (Bowditch et al., 2008). Managing effective organisational change in healthcare is challenging. Depending on how changes are measured in the healthcare context, the failure rate for implementing change in organisations ranges from 30% to 90% (Jacobs et al., 2015). However, the type of change and the context of organisational change is important as it influences whether or not a change will be successful (Rafferty and Simons, 2006). Failure to implement successful organisational change is frequently attributed to a failure to establish sufficient organisational readiness to change (ORC) (Rafferty et al., 2013, Vakola, 2013, Kotter, 1996).

Conceptualizations of ORC are the subject of ongoing discourse, however in a seminal paper, Weiner (2009,p6) describes ORC as 'a shared psychological state in which organisational members feel committed to implementing an organisational change and confident in their collective abilities to do so'. ORC is interpreted as a multi-dimensional concept involving not only different organisational levels but also cognitive and affective components which can be described in colloqial terms as individuals and/or groups being *willing* and *able* to implement change

(Weiner et al., 2008). Understanding this concept is important, as it has been suggested that a failure to establish sufficient readiness accounts for over half of unsuccessful efforts in organisational change (Kotter, 1996). Conversely, when ORC is favourable, organisational members are more likely to show initiative, work harder and co-operate, which in turn results in more effective implementation and continuation of change (Holt and Vardaman, 2013, Weiner et al., 2008).

In the substance misuse treatment field, there is a paucity of research on the implementation of change and the adoption of new innovations based on scientific evidence (Garner, 2009, Miller et al., 2006). Successful innovation adoption in organisations involves a process, and in order to conceptualize the process of innovation adoption more effectively, it is standard practice for researchers to discuss the process in stages (Garner, 2009). For example, the program change model described by Simpson (2002) describes a four-stage model of program change that relates to the adoption of innovations: (i) *training* (e.g. exposure to new innovations), (ii) *adoption* of the new practice (representing a decision taken to adopt and/or to take action to do so), (iii) *implementation* (sustained support for the change effort), and finally (iv) *practice* where the change becomes standard practice. Although the four stages are conceptually distinct, the process in practice is characterised by their interdependence.

In the context of introducing new innovations and change, the characteristics of organisations, which are often measured through staff perceptions, can be an important factor in determining success at each stage of this process (Lundgren et al., 2013, Lehman et al., 2002). In recent years, the relationship between ORC and the process of innovation adoption has been highlighted by a

number of researchers (Gagnon et al., 2014, Simpson, 2002). While it is widely accepted that particular innovations are effective, little is known about the organisational dynamics which can determine how effectively evidence based treatments are adopted into practice. This systematic review will examine empirical papers which examine the relationship between ORC, where is has been operationalized as a distinct construct, and any of the four stages of innovation adoption in substance misuse treatment programs.

3.1.2 Methods

A systematic literature search was performed following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analysis) guidelines (see Figure 3. 1 for PRISMA flow diagram). The search strategy included keywords which related to three search categories: (i) readiness, change, innovation, implementation (ii) organisations, teams (iii) substance misuse treatment. These terms were combined using the Boolean terms AND/OR as appropriate (see Table 3. 1)

Table 3. 1 Search Strategy

S1: Terms associated with readiness, organisational change, innovation and implementation

(TI(Capability OR preparedness OR acceptance OR willingness OR capacity OR commitment OR participat* OR chang* OR innovat* OR transform* OR efficienc* OR implement* OR disseminat* OR function* OR effectiv* OR climate OR engagement) OR AB(Capability OR preparedness OR acceptance OR willingness OR capacity OR commitment OR participat* OR chang* OR innovat* OR transform* OR efficienc* OR implement* OR disseminat* OR function* OR effectiv* OR climate OR engagement) AND (TX (Readiness)

AND S2: Terms associated with organisations, teams and individuals

(TI(Organiz* OR organis* OR institution* OR team OR individual OR program* OR work* OR service OR system) OR AB(Organiz* OR organis* OR institution* OR team OR individual OR program* OR work* OR service OR system)

AND S3: Terms associated with substance misuse and associated treatment services

(TI(cocaine OR crack OR opi* OR heroin OR amphetamine* OR methamphetamine* OR MDMA OR ecstasy OR methylenedioxymethamphetamine OR cannabis OR marijuana OR psychedelic OR mushroom OR glue OR inhalant OR poly* OR substance* OR drug misuse OR drug abuse OR addict* OR dependen* OR drug treatment* OR drug counsel* OR treatment program* OR drug user*) OR AB(cocaine OR crack OR opi* OR heroin OR amphetamine*OR methamphetamine* OR MDMA OR ecstasy OR methylenedioxymethamphetamine OR cannabis OR marijuana OR psychedelic OR mushroom OR glue OR inhalant OR poly* OR substance* OR drug misuse OR drug abuse OR addict* OR dependen* OR drug treatment* OR drug counsel* OR treatment program* OR drug user*)

3.1.2.1 Eligibility Criteria

Electronic data bases MEDLINE, PsychINFO, SOCindex and Business Source Complete were searched to identify relevant peer reviewed academic papers published in the English language between 2001 and 2016. Electronic data base searching generated 1770 articles which were added to a reference manager database and after duplicates were removed 1585 articles remained. Two investigators (AH, PK) independently screened all papers by title and abstract and appraised the full text of 29 papers. Reference lists of included papers were also checked for potential papers, and a further 10 articles were subject to full text review, but none of these met the inclusion criteria for this paper. A third reviewer (JH) was available as an arbiter for resolving discrepancies if necessary.

3.1.2.2 Study Selection and Data Extraction

Study designs where organisational readiness to change in adult substance misuse treatment programs was a primary focus were included where they related to any of four stages of innovation adoption; *training, adoption*, *implementation* and *practice* (Lehman et al., 2011, Simpson et al., 2007). Innovation, which involved organisational change, was interpreted as 'the process of developing new approaches, technologies and ways of working' (Kaya et al., 2016 ,p1676). Due to differences in policy frameworks and funding streams, studies aimed exclusively at adolescent or mental health treatment services were not included. Study protocols, studies investigating construct validity or psychometric properties of instruments, theoretical papers and pilot studies; where data pertaining to organisational readiness to change could not be extracted were also excluded. Included papers (n=14) were thoroughly assessed and categorised in accordance with the stage of the innovation adoption process to which they most closely related. Data tables were developed with headings: author, title, country, study aim, study design, sample size, innovation type, instruments and definition of ORC, relationship between ORC and findings, quality

assessment and further comments and other key finding. These were designed to incorporate the main findings in the papers and were separated according to the most relevant stages of innovation adoption. A narrative synthesis was conducted using data from the completed tables and important findings from each paper.

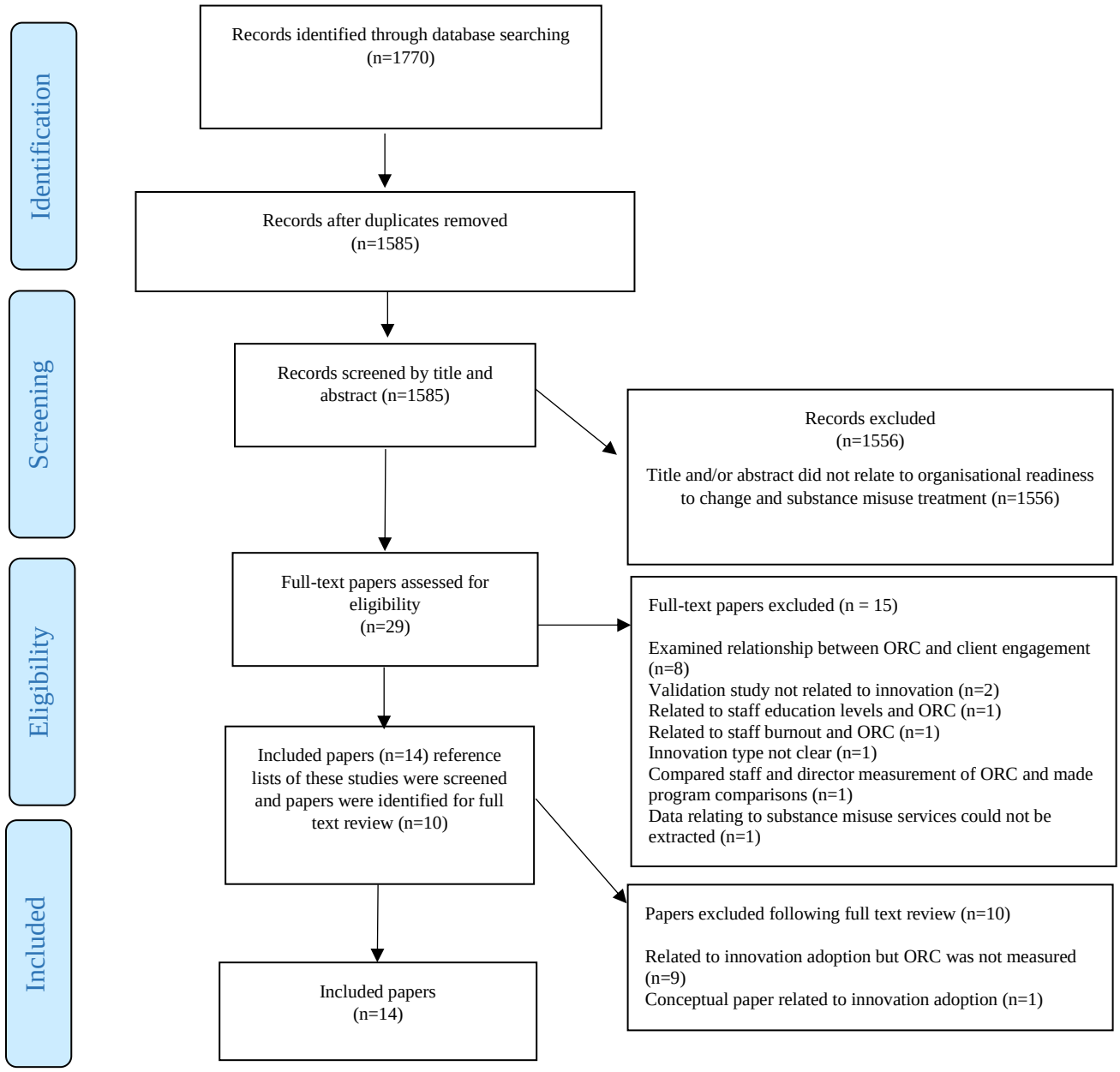


Figure 3. 1 PRISMA flowchart illustrating the search process and number of included papers

3.1.2.3 Quality Appraisal

Quality appraisal tools in systematic reviews can increase rigour and reduce the risk of bias (Sanderson et al., 2007). Two investigators (PK, KD) independently quality assessed the included papers. The NIH Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies (National Heart Lung and Blood Institute, 2016) was used and the Cochrane Collaboration for assessing risk of bias for RCT's (Higgins et al., 2011) was used to assess the quality of the RCT. The methodological quality of the included studies was appraised based on their scientific rigour and were graded according to fourteen criteria for all papers except the RCT. The criteria assessed rigour in areas such as sample size and population, eligibility criteria, exposures, timeframes and outcome measures. A score was then calculated, and the quality of the studies was ranked as either poor (0%) fair (85%) or good (15%). The RCT was assessed as having a low risk of bias.

3.1.3 Results

3.1.3.1 Study Characteristics

Following a full text review, fourteen papers met the inclusion criteria for this review. Included studies used a number of approaches including cross sectional quantitative designs (n=8), mixed methods approach (n=2), a randomised control study (n=1), a cross sectional interventional study (n=1), a longitudinal, prospective quasi-experimental study (n=1) and one study described a quality improvement initiative (n=1). One of the studies was conducted in the United Arab Emirates with the remainder being conducted in the United States. The majority of studies focused on staff with only two of the studies incorporating patient measures. Studies were conducted across a range of treatment settings. These settings included out-patient prescribing and non-prescribing programs as well as in-patient detoxification and residential rehabilitation settings. Reflective of an interdependent 4-stage process of innovation adoption, is that most of the included papers did

not focus on an individual stage. Of the fourteen eligible papers, six papers focused principally on exposure to training and the adoption of training, while six papers focused principally on adoption and implementation of specified practices (for which training may already have taken place), while two papers described a process of implementation. None of the studies were suitably structured to measure the final stage of innovation adoption, the sustained integration of an innovation into practice.

This review was designed to include all constructs of ORC where it was operationalized but all fourteen papers measured organisational readiness to change using an ORC measurement tool, or a modified version of a tool developed by Lehman et al. (2002) (see http://ibr.tcu.edu/forms/organizational-staff-assessments/). Although a systematic review of ORC instruments by Gagnon et al. (2014) (n=26 ORC tools) was not within the scope of this review, the ORC tool devised by Lehman et al. (2002), was shown to have the highest psychometric properties and this provides a good basis for all of the included studies. The ORC assessment tool (Lehman et al., 2002) which is summarized in Table 3. 2 provides a numerical measure of the organisational traits that can influence the adoption and implementation of new practices. This ORC tool has four domains, which include eighteen subscales: (i) Motivation for change (needs/pressures): program needs, training needs, pressures for change (ii) Resources: Offices, staffing, training, equipment, internet (iii) Staff Attributes: Growth, efficacy, influence, adaptability (iv) Organisational Climate: Mission, cohesion, autonomy, communication, stress, openness for change. Within the eighteen subscales, this tool includes a total of one hundred and eighteen scaling questions.

Table 3. 2: ORC Scales and what they measure

A. MOTIVATION FOR CHANGE (AGENCY NEEDS)
   1. **Program needs:** Staff's appraisal of the programs attributes and deficits, specifically relating to program objectives, performance, staff dynamics, and communication systems.
   2. **Training needs:** Staff identification of training needs in a range of specific areas.
   3. **Pressures for change**: Staff's perceptions of sources of change, internal: (e.g. service users, managers or staff) or external (e.g. regulation, funding).

B. INSTITUTIONAL RESOURCES
   1. **Offices:** The appropriateness of equipment and the physical environment.
   2. **Staffing:** Adequacy of skill mix and staffing levels.
   3. **Training resources:** Emphasis placed by program on training in respect of prioritising and providing exposure.
   4. **Equipment:** Utilization and provision of computerized systems and hardware.
   5. **Internet:** Staff ease of access to e-communications and utilization of internet for professional development.

C. STAFF ATTRIBUTES
   1. **Growth:** The degree to which staff are provided with and utilize opportunities for professional development.
   2. **Efficacy:** Staff beliefs about their own professional abilities and ability to perform effectively.
   3. **Influence:** The degree to which an individual provides support for others and influences decision making.
   4. **Adaptability:** Staff capability, willingness to learn and adapt new ideas.

D. ORGANISATIONAL CLIMATE
   1. **Mission**: Clarity of organisational goals.
   2. **Cohesion:** Dynamics between staff; levels of teamwork, co-operation and trust.
   3. **Autonomy:** The degree to which the program facilitates independent decision making.
   4. **Communication:** The degree to which information is shared, effectiveness of formal and informal information networks and interactions with managers.
   5. **Stress:** Staff perceptions of workload, pressure and levels of frustration amongst staff.
   6. **Change:** Staff participation in and program's ability to facilitate change and embrace new ideas.

A comprehensive summary of all of the fourteen papers is provided in Table 3. 3. As all of these papers related to more than one stage of the process of innovation adoption, and in order to facilitate analysis and to prevent the table from becoming unnecessarily cumbersome, papers were categorised into two groups depending on their focus. Papers that related principally to training or a training event were categorised into (a) Exposure to and adoption of training, while the remaining papers were categorised as relating to (b) Adoption and implementation of innovations. Within each classification, studies have been ordered by author and year. Although all of these studies measured ORC using the tool or a shortened version of the tool developed by Lehman et al. (2002), few of the studies were directly comparable in terms of their objectives and methodology. The implication was that cross comparison of results was challenging and a meta-analysis was not possible. It is impractical to discuss all of the significant results from the subscales in the fourteen studies included in this paper. Therefore, in most cases, this paper will principally refer to 4 the ORC domains but will discuss subscales where they have special significance or where a shortened version of the ORC tool has been used.

Table 3. 3 Extraction Table ORC and Innovation Adoption

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Innovation type 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and innovation- Key findings 9. Quality Assessment 10. Further comments/ other key findings
1. Courtney et al. (2007). 2. United States. 3. To identify the characteristics of substance misuse programmes which would increase their likelihood of engaging in organisational quality improvement. Study was completed in two phases: i. Staff from programmes completed a questionnaire on organisational functioning ii. Workshop was held for programmes directors where results of the staff survey was reported to programme leaders. Quality improvement strategies were identified and planned. A decision by directors to engage in follow up organisational change was used as an indicator of engagement in programme change. 4. Cross-sectional survey + interventional study.	5. Counsellors (n=284) from 53 substance misuse treatment organisations. ORC questionnaire was completed online by staff one month before a workshop. 11 of 53 programmes declined to take part in the change process. 6. Workshop participants were given feedback from ORC data. Objective was to prioritise issues identified in the survey and to plan a change process. The 10 steps presented in *The Change Book* (Addiction Technology Transfer Centers, 2004) was used as a guide. Directors/Leaders were then asked to commit to a change process. 7. ORC assessment (Lehman, Greener, & Simpson, 2002), The Change Book (Addiction Technology Transfer Centers,2004).	8. **Motivation for change domain**: Staff perceptions of higher programme needs were positively related to engagement in the change process. The odds ratio increased by 11% for each unit increase in programme needs (OR=1.11, p=0.001). Lower staff consensus (i.e. larger standard deviations (SD) for programme needs (OR=1.31,p=0.0001) was related to engagement in the change process. Higher staff consensus in this domain (smaller S/D) for pressures for change (OR=.57, p=0.0001) was related to engagement in the change process. **Institutional resources domain**: Negative staff perceptions in the following areas were associated with a higher likelihood of engaging in a change process: staffing (OR=.78, p=0.0001): training (OR=.94, p=0.0039): computer access (OR=.89, p=0.003): e-communication (OR=.97, p=0.0001). Lower staff consensus (larger S/D) for staffing (OR=.86, p=0.01) was related to engagement in the change process **Staff attributes domain**: Negative staff perceptions in the following areas were associated with a higher likelihood of engaging in a change process: growth (OR=.87, p=0.0003): influence (OR=.85, p=0.002). Lower staff consensus (re: larger S/D for influence (OR=1.27, p=0.004) was related to engagement in the change process. **Organisational climate domain:** Negative staff perceptions in cohesion (OR=.93, p=0.01): communication (OR=.83, p=0.0001): openness to change (OR=.80, p=0.0001) were associated with a higher likelihood of engaging in a change process. While the odds of engaging increased 41% for every unit increase on the stress scale (OR=1.41, p=0.0001). Higher staff consensus on climate scores (lower S/D) in the following areas was related to continuation in the change process: cohesion (OR=.81, p=0.0001): autonomy (OR=.89,p=0.05): stress (OR=.87, p=0.01): openness to change (OR=.90, p=0.006). **Summary of ORC key findings::** i. Negative staff views of programme needs are related to increased engagement in the change process. ii. Organisations that are viewed as functioning less adequately are more likely to engage in a change process. iii. Results in the organisational climate domain only support the hypothesis that staff consensus is associated with engagement in the process of organisational change. 9. Fair 10. N.A.
1. Joe et al. (2007). 2. United States 3. i. To identify counsellors types based on measures of the work environment using 2 ORC domains; organisational climate and staff attributes. ii. To identify if items in the motivation for change and resources domains were predictors of these counsellor types.	5. 345 Substance misuse treatment programmes across 10 US states were examined. 1047 counsellors from the treatment programmes completed a questionnaire 3 months prior to a training conference. 6. Previous training exposure, individual and programme-wide adoption and satisfaction with training. 7. ORC assessment (Lehman, Greener, & Simpson, 2002); and demographic information on counsellors not included in ORC but reported to be predictive of counsellor turnover and additional subscales on training outcomes; exposure to, satisfaction with training and individual and programme-wide adoption.	8. Based on organisational climate and staff characteristics scores, counsellors were grouped into three classes: i. Isolated (43%, n=450) ii. Integrated (43%, n=449) iii. Exceptional (14%, n= 148) The "isolated" group had higher scores on stress and lower scores on communication and cohesion. Those reporting higher scores in the programme resources domain were more likely to belong to integrated or exceptional groups, with all of the scales in programme resources domain being significant. "Isolated" group had higher training needs, programme needs and were more likely to report pressures for change than the other groups. The isolated group reported significantly lower scores than the integrated or exceptional groups in respect of: training exposure ($p<0.01$), individual adaptation ($p<0.01$), programme wide adoption ($p<0.0001$), and satisfaction ($p<0.0001$). **Summary of ORC key findings:**

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Innovation type 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and innovation- Key findings 9. Quality Assessment 10. Further comments/ other key findings
iii. To examine the relationship between counsellor type, as designated by this study, and adoption and satisfaction with workshop training. 4. Cross-sectional survey		i. The organisational climate domain was reported as being an important predictor of whether counsellors were ready to engage in the adoption process ii. Staff perceptions of the resources domain and the motivation for change domain were important predictors of counsellor types as designated in this study 9. Fair 10. Those with a longer tenure were more likely to be in the "isolated" group. African Americans were more likely to be in the exceptional group. Interns were more likely to be in the integrated or exceptional groups.
1. Lehman et al. (2012a) 2. United States 3. To examine the relationship between two combined influences; programme fiscal resources and counsellors perceptions of workplace resources on two mechanisms of training; exposure to training and utilisation of training. 4. Cross sectional survey	5. 59 out-patient drug treatment programmes and 323 counsellors. Data was extracted from a 5 years Treatment Costs and Organisational Monitoring (TCOM) project (Broome, Flynn, Knight, & Simpson, 2007; Flynn et al., 2009; Knight, Broome, Simpson, & Flynn, 2008) All programmes had completed a programme level financial assessment and counsellor level organisational assessments in the first year of the TCOM project. Directors or financial officers provided information on treatment costs. Program directors/ clinical managers provided information on programme characteristics. Clinical staff and directors provided information on organisational functioning. 6. Exposure training to and utilisation of training 7. TCU Survey of structure and operations (SSO; Knight, Broome, Simpson & Flynn 2008). Treatment Costs Analysis Tool (TCAT; (Flynn et al., 2009). Survey of Organisational Functioning (SOF; Broome, Flynn, Knight, & Simpson, 2007; Lehman, Greener, & Simpson, 2002)	8. **Motivation for change domain:** Correlation co-efficients for the staff level outcomes showed that higher expressed training needs was related to lower training exposure ($p<0.05$). In a composite model combining programme and staff level relationships, training needs was related to training exposure ($p<0.10$) **The institutional resources:** training exposure correlated with office resources ($p<0.05$) and training resources ($p<0.001$) and e-communication ($p<0.001$). Training utilisation correlated with e-communication ($p<0.01$). In a composite model combining programme and staff level relationships, less training exposure was related to better office resources ($p<0.05$), poorer training resources ($p<0.001$), and less access to e-communication ($p<0.01$). **Summary of ORC key findings:** i. Staff who reported greater resources also reported greater exposure to training ii. E-communication is important to training exposure 9. Fair 10. Other findings at the staff level were: higher levels of staff burnout were associated with poorer training utilisation while reporting a sense belonging in a professional community related to better exposure and utilisation. Higher job satisfaction was related to more training exposure. Other findings in the composite model were: poorer training utilisation is associated with higher burnout rates and direct client contact time. Program costs and job resources influence the level of exposure to training but utilisation is more closely associated with job attitudes and being part of a co-operative professional community.
1. Lundgren et al. (2011a). 2. United States 3. i. To determine the association between treatment directors attitude to organisational change and their attitudes towards staff being resistant to organisational change. ii. To determine the level of association between staffs attitude towards the treatment units capacity for organisational change and their attitudes regarding wanting training in Evidence Based Practice (EBP). 4. Cross sectional survey.	5. 212 Community substance misuse treatment centres randomly selected from 700. 212 programme directors and 312 staff from selected programmes were included. Staff completed a telephone assessment and completed ORC assessments online. 6. Training based on scientific evidence or EBP 7. ORC (Lehman, Greener, & Simpson, 2002) Texas Christian University ORC-D (for directors) and ORC-S (for staff).	8. **Motivation for change domain:** Bivariate analysis of ORC subscales demonstrated that staff who reported higher programme needs reported a greater preference for training based on scientific evidence ($p<0.05$). **Staff attributes domain:** Bivariate analysis of ORC subscales demonstrated that staff who reported more adaptability ($p<0.05$), greater efficacy ($p<0.01$) and more influence in their workplaces ($p<0.01$) reported a higher preference for training based on scientific evidence. **Organisational climate domain:** Multivariate analysis of ORC subscales demonstrated that staff who reported higher organisational openness to change also expressed a greater preference for training based on scientific evidence ($p<0.05$). This finding was supported in a final linear regression model ($p<0.05$). **Summary of ORC key findings:** i. Final linear regression analysis demonstrated that staff perceptions of their organisations willingness to support change was the most important ORC variable in respect of individuals showing a higher preference for training based on scientific evidence. ii. Directors who reported that their programmes had higher needs, had less autonomy and cohesion amongst staff were significantly more likely to report their staff members as being resistant to change.

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Innovation type 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and innovation- Key findings 9. Quality Assessment 10. Further comments/ other key findings
		9. Fair 10. Staff with higher levels of education reported significantly greater support for training based on scientific evidence.
1. Rowan-Szal et al. (2007). 2. United States i. To confirm factor structure and basic psychometric properties of seven Programmes Training Needs (PTN) scales. ii. To explore differences between how staff and directors characterise their training requirements. iii. To explore the relationship between the PTN assessment and organisational readiness to change (ORC). 5. Cross sectional survey.	6. 589 PTN assessments were collected from 194 addiction treatment programmes. 579 ORC assessments were completed in 231 addiction treatment programmes. Data was collected over a two year period. 7. Training needs, training of staff, assessment of facilitators and barriers, Programme Training Needs (PTN) assessment (Rowan-Szal et al., 2007), ORC assessment (Lehman, Greener, & Simpson, 2002).	8. Correlations of PTN scales with composite scores of ORC domains: **Motivation for change (needs/pressure):** Staff reporting greater training needs ($p<0.001$) and higher preferences for specific training content ($p<0.001$) reported higher motivation for change. **Resources:** Staff reporting higher satisfaction with training ($p<0.001$) and better programme facilities and climate ($p<0.001$) who had lower preferences for specific training content ($p<0.01$), reported lower barriers to training ($p<0.001$) also rated their programme resources as being greater. **Organisational Climate:** Staff who rated their agencies as having a better organisational climate rated their programmes facilities and climate more highly ($p<0.001$) and reported greater satisfaction with training ($p<0.001$) and had less specific preferences for training content ($p<0.05$) and reported lower barriers to training ($p<0.001$). **Staff attributes:** Staff who reported higher attributes amongst staff also had greater satisfaction with training ($p<0.05$) and rated programme facilities and climate as being better ($p<0.05$). **Summary of ORC Key findings:** i. Staff reporting higher motivation for change also expressed higher needs for training and higher preference on training content scales. ii. Staff reporting higher training barriers had poorer perceptions of organisational climate and programme resources on ORC subscales. iii. Treatment units with higher staff ratings of institutional resources and climate scores also reported better facilities, fewer barriers to training and greater satisfaction with training. 9. Fair 10. Staff and directors tended to agree on most training issues. On the PTN scales staff training needs and training barriers were significantly higher in programmes with poorer programme facilities and climate and poorer computer resources. Programmes reporting more barriers were less satisfied with training.
1. Simpson and Flynn (2007) 2. United States 3. i. To evaluate if staff perceptions about training needs and programme readiness related to subsequent staff evaluations of training and adoption of innovations ii. To evaluate if the level of organisational functioning is related to staff responses to subsequent training iii. To evaluate if staff ratings on the quality of workshop training related to subsequent client ratings of treatment engagement iv. To identify if there are long term changes in staff ratings of programme needs and readiness	5. Data was collected over a two year period. Subject pool consisted of supervisors, staff and clients from publicly funded substance abuse treatment programmes in one US state. <u>12 months before a training workshop:</u> 253 programme training needs assessments (PTN) were completed across 59 treatment programmes <u>4 months before a training workshop:</u> 191 organisational readiness to change (ORC)* forms were returned and 1,147 client evaluation of self and treatment (CEST) forms were returned <u>During the training period:</u> Workshop Evaluation Surveys (WEVAL) 293 were collected from staff participants <u>6 months after training:</u> 293 Workshop Assessment Follow Up (WAFU) forms were completed <u>9 months after training:</u> 174 ORC* forms were returned and 1,015 CEST forms were returned	8. **Organisational Climate:** When ORC (Time 1 only) was correlated with the WAFU measures, staff who perceived their programmes to have higher mission clarity also reported higher post-training satisfaction ($p<0.01$), more trial use of the innovation ($p<0.05$), improved counselling skills after training ($p<0.05$) and better therapeutic alliance and rapport. Staff who perceived their staff group as having higher cohesion ($p<0.05$), and better communication ($p<0.05$), also reported better therapeutic alliance and rapport post training. Staff who perceived their organisations as having more openness to change were significantly more likely to report higher post-training satisfaction ($p<0.05$), trial use of the innovation ($p<0.05$), better counselling skills ($p<0.05$), and better therapeutic alliance and support ($p<0.05$). **Summary of ORC Key findings:** i. Organisational openness to change was significant in terms of realising the implementation of the innovation. Mission clarity was also an important ORC variable in this respect. 9. Good 10. For the CEST evaluation, better counsellor rapport was significantly related to staff reports of greater post-training satisfaction and trial use of the innovation. Higher client treatment participation had a significant relationship with higher staff ratings of post-training satisfaction, trial use of the innovation and better counselling skills. In particular, higher staff ratings of programme facilities and climate, programme resources and computer facilities significantly related to adoption of training.

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that are related to intervening training experiences. 4. Longitudinal, prospective quasi-experimental interventional study.	<u>12 months after training:</u> 192 PTN forms were returned (number of treatment programmes not stated) 6. Training needs assessment with follow-up workshop (focused on how to improve therapeutic alliance) and evaluation. 7. Pre-Training Needs assessment (PTN: Rowan-Szal et al, 2007). *Multi-dimensional ORC assessment (Lehman, Greener, & Simpson, 2002): only organisational climate subscales were used for this paper. Client Evaluation of Self and Treatment (CEST: (Joe, Broome, Rowan-Szal, & Simpson, 2002), Workshop Evaluation (WEVAL: (Bartholomew, Joe, Rowan-Szal, & Simpson, 2007), Workshop Assessment Follow Up (WAFU: (Bartholomew et al., 2007).	
1. Crits-Christoph et al. (2011). 2. United States 3. To evaluate the efficacy of a real time patient feedback survey (PFS) on 3 patient outcomes: drug and alcohol use, attendance at group counselling sessions, and therapeutic alliance. To explore if implementation of the intervention had an effect on clinician related measures such as organisational functioning and job satisfaction. 4. RCT/ randomised cohorts	5. Over 1,500 service users and 118 clinicians from 20 community based non-methadone prescribing outpatient substance misuse clinics divided into two cohorts; ten intervention (PFS) and ten non-intervention programmes. 6. Intervention involved patient feedback and organisational quality improvement measures including patient newsletters and patient feedback letters for staff over a twelve week period of group therapy. Control group completed PFS at weeks one and twelve while intervention group completed PFS weekly. Control group then engaged with PFS after week twelve. 7. <u>Patients:</u> Patient feedback survey (PFS) measuring 4 domains: *i.* Service user demographics, therapeutic alliance treatment satisfaction ii. Self-reported substance misuse using two items from The Addiction Severity Index (McLellan, Luborsky, O'Brien, & Woody, 1980) <u>Staff:</u> Three questionnaires measuring: i. ORC questionnaire (Lehman, Greener, & Simpson, 2002). ii. Employee/supervisor relationship iii. Job satisfaction	8. **Summary of ORC key findings:** i. No significant relationships were found between ORC at baseline and week 12 or between the two groups. ii. The PFS intervention did not change staff views of organisational readiness to change. One exception being a small but significant difference (p=0.023) between the study groups from baseline to week 12 in the institutional resources scale, explained due to a small decrease in the intervention group and a small increase in the control group. iii. There was no evidence of an intervention effect on the primary drug and alcohol use scales: secondary measures of therapeutic alliance: clinician-related measures of organisational functioning and job satisfaction. 9. Good. (low risk of bias) 10. Primary focus of this study was not on organisational readiness to change.
1. D'ambrosio et al. (2006). 2. United States 3. To describe the process of implementing a Knowledge adaption study (KAS) – Implementation of Motivational Interviewing in two substance misuse treatment agencies	5. A large outpatient substance abuse treatment provider serving both adolescents and adults and a residential substance misuse agency providing treatment for corrections involved adult men and women. 6. Implementation of Motivational interviewing Researchers followed the 10 step process in 'The Change Book' (Addiction Technology Transfer Centers, 2004) using researchers as change agents. Training in MI and	8. **Summary of ORC key findings:** i. The research team underestimated the implications of results of the ORC. At the small agency, high stress and low cohesion in the adult women's programme was identified. These findings were overlooked and later accredited with the study having to move to the men's programme due to encountering difficulties in its implementation. No further relationships with organisational readiness were reported 9. Fair 10. N.A.

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over a two year period where ORC was assessed as a part of this process 4. Mixed Methods	monitoring of implementation was provided over the period. ORC was measured (over 2 months in year one) to inform process. 7. ORC assessment (Lehman, Greener, & Simpson, 2002); multi-dimensional concept of ORC. 'The Change Book' (Addiction Technology Transfer Centers, 2004)	
1. Elarabi et al. (2014). 2. United Arab Emirates 3. To describe the experience of programme transformation in a residential substance dependence treatment programme over a four year period in two phases; program development+ program implementation. Organisational readiness to change is measured as part of an implementation framework. 4. Description of innovation.	5. 26 bedded mix of inpatient detoxification and rehabilitation beds and a 15 bedded long-stay Therapeutic Community. 14 treatment staff completed the ORC questionnaire 6. Re-design of programme an implementation of changes in two phases over a 3 year period: program development and implementation. Changes intended to address; length of stay, long waiting lists, service expansion and diversity in demand for treatment. A task force (n=7) was responsible for an assessment and implementation process. 7. ORC assessment (Lehman, Greener, & Simpson, 2002); multi-dimensional concept of ORC. Utilised Comprehensive Framework for Implementation Research (CFIR) (Damschroder et al., 2009).	8. **Summary of ORC key findings:** i. All 4 domains of ORC; (n=14) Staff/Climate/Resources/ Motivation scored below acceptable mean, identifying a significant need for change. ii. Study reported that low mean scores in four ORC domains identifying high programme needs. These needs were confirmed by internal audit. iii. Problem barriers to implementation were identified through measurement of ORC and were reported as having facilitated the process of implementation. 9. Fair 10. NA
1. Fuller et al. (2007). 2. United States 3. To assess the relationship between organisational readiness to change (ORC) and staff opinions towards five different treatment approaches. Four evidence based practices: i. Use of evidence based treatment manuals. ii. Medications. iii. Integrated mental health services. iv. Motivational incentives. v. **AND** confrontation and non-compliance discharge. 4. Cross sectional survey.	5. Programme administrators and staff from 249 participating programmes; outpatient (n=79) residential and in-patient (n=95), detoxification programmes (n=34), methadone programmes (n=41). Number of participants not clear- number of questionnaires not completed in full: (between n= 2,136 and n= 2,234). Opinions towards treatment types were measured as outcomes using ORC (level 1 predictor) as an independent variable. Level 2 predictors examined type of treatment service e.g. free standing treatment centres, for profit status, revenue, inpatient / outpatient etc. 6. Four innovation types and one negative outcome (v) i. Use of treatment manuals ii. Medications iii. Integrated mental health services iv. Motivational incentives v. Confrontation and non-compliance discharge was considered to be a negative outcome ORC assessment (Lehman, Greener, & Simpson, 2002); multi-dimensional concept of ORC. Two additional questionnaires on organisational characteristics and workforce demographics were used, details of which are not reported in this paper.	8. Level 1 (ORC) influences on opinions towards treatment innovations: **Motivation for change domain:** Staff who viewed their programmes needs as being greater had significantly more support for the use of treatment manuals ($p<0.005$), medications ($p<0.05$), and motivational incentives ($p<0.05$). **Institutional resources domain:** The computer equipment subscale had a negative relationship with the use of treatment manuals ($p<0.05$), and a positive relationship with the use of confrontation and non-compliance discharge ($p<0.05$). Staff associated better offices with increased support for non-compliance discharge ($p<0.001$). Staff perceptions of better internet access was associated with increased support for the use of motivational incentives ($p<0.001$), treatment manuals ($p<0.05$), and medications ($p<0.01$). Support for non-compliance discharge and confrontation was strongest in agencies with poorer perceived internet access ($p<0.001$). **Staff Attributes domain:** Staff who reported higher influence reported more support for integrated treatment manuals ($p<0.001$), motivational incentives ($p<0.01$), and use of treatment manuals ($p<0.01$). Higher opportunities for growth were associated with increased support for the use of medications ($p<0.01$). Staff who saw themselves as more adaptable were more likely to support integrated mental health services ($p<0.05$), and the use of treatment manuals ($p<0.05$). Support for non-compliance discharge and confrontation were stronger when staff saw less opportunity for growth ($p<0.001$), and less influence with their peers ($p<0.05$). **Organisational Climate Domain:** A greater sense of programme mission was associated with support for the use of treatment manuals ($p<0.001$) and integration with mental health services ($p<0.05$). Support for integration with mental health services was also associated with higher staff cohesion ($p<0.01$) and greater stress ($p<0.0001$) and lower ratings on openness of communication ($p<0.01$). Higher staff autonomy was associated with less support for the use of motivational incentives ($p<0.05$). Lower organisational stress was associated with more support for the use of confrontation and non-compliance discharge.

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		Summary of ORC key findings: i. Programmes with higher staff scores on programme needs were more likely to support EBPs [Evidence Based Practice's] ii. Better Internet access and growth and influence amongst work peers appears to be key in supporting the use of EBPs and reducing support for non-compliance discharge and confrontation. iii. Staff attributes are important both in terms of supporting the use of EBPs and reducing support for confrontation and non-compliance discharge. iv. Organisational climate was important as having a strong sense of mission and supportive of the use of EBPs. Low stress was associated with support for non-compliance discharge and confrontation perhaps reflecting a lack of pressure to change v. Ratings for better offices and computer access and increased support for non-compliance discharge may be because these services had poorer internet access. 9. Fair. 10. N.A.
1. Henry et al. (2010). 2. United States. 3. To assess attitudes towards HIV testing generally and to assess organisational readiness to implement a nurse-initiated HIV testing specifically in two substance use disorder treatment clinics for military veterans 4. Mixed methods study completed in two phases: i. Semi-structured interviews with key stakeholders to assess attitudes regarding implementation. ii. Cross sectional survey conducted of staff to assess level of agreement in supporting evidence base for intervention and organisational readiness to implement the intervention.	5. Two veteran's health administration substance use disorder clinics. **Site 1** serves approx. 4,500 patients per annum with 5 programmes: detoxification, dual diagnosis specialism, 4-month psycho-social programme, chemical dependency unit and opiate treatment programme. **Site 2** serves approx. 2,300 patients per annum offering several treatment modalities with a wide range of pharmacological and psycho-social treatments. **Phase one** involved staff from site 1 (n=17) and site 2 (n=11). **Phase two** surveyed staff from site 1 (n=29) and staff from site 2 (n=21). 6. HIV testing and proposed nurse led HIV testing. 7. Survey items based on PARiHS framework (Kitson et al., 2008). Organisational readiness for this specific change was assessed by obtaining staff views of; research evidence, clinical experience, patient experience, fit with organisational mission (Henry et al, 2010). Shortened version of ORC assessment (Lehman, Greener, & Simpson, 2002); multi-dimensional concept of ORC, using organisational climate subscales only- 30 items examining; mission, staff cohesion, autonomy, openness of communication, stress and openness to change.	8. **Phase 1** (Qualitative) findings staff responses to implementation site 1 and 2 combined found that 13 staff supported the model, 9 were negative towards it and 4 had mixed views. 13 staff anticipated the patient's reaction would be positive, 6 reported that it would be negative and 4 had mixed views. Staff on both sites (n=22) agreed that the client group was at high risk of HIV infection and that rapid testing was supported by research. Barriers to implementation identified (both sites) were: i. Characteristics of the client population- chaotic lifestyles, unable to keep appointments etc. ii. Workload, time and resources- service capacity iii. Emotional impact of positive result on clients and follow up treatment **Staff at site 1**: identified the 'medical nature' of testing as being a barrier as they typically referred clients to primary care for medical issues. They also identified agreement with unions as being a barrier. **Phase 2** (Quantitative): Both sites supported the view that the initiative was evidenced based. Both sites fell within ORC percentile ranges (25%-75%) based on 2000 interviews conducted by Simpson and Dansereau (2007). Site 1 scored more highly on; mission ($p<0.05$), and lower on stress ($p<0.05$). Site 2 scored more highly that the initiative 'fits with their mission' ($p<0.05$). **Summary of ORC key findings::** i. Both sites would be suitable for the implementation of the initiative as they scored within ORC percentile ranges. ii. Site 1 adopted a higher degree of organisational readiness to adopt new innovations as indicated by shared understanding of the clinic mission and lower stress so may be more receptive to the initiative. iii. Findings can be used to tailor implementation strategies which are appropriate to the particular programme dynamics. 9. Fair 10. N.A.

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1. Lundgren et al. (2013). 2. United States. 3. To examine whether treatment units staff perceptions of their organisations readiness to change was associated with their adherence or levels of modifications to evidence based practice (EBP) protocols during evidence based practice implementation. 4. Cross sectional survey.	5. 310 addiction treatment programmes and 510 staff selected from a range of locations in the US. All of these programmes had been selected and funded to implement evidence based practice by Centre for Substance Abuse Treatment (CSAT) and Substance Abuse and Mental Health Services Administration (SAHMSA). A telephone interview using open ended questions regarding implementation of EBPs was conducted. ORC questionnaire with extended training exposure, satisfaction and utilisation (programme level and individual level) domain included was completed online. Demographic information on workers was collected 6. Implementation of 3 types of EBPs: Motivational Interviewing, Adolescent Community Reinforcement Approach and Cognitive Behavioural Therapy. 7. Levels of barriers to implementing EBPs was recorded using a 10 point scale. ORC assessment (Lehman, Greener, & Simpson, 2002.	8. **Staff attributes domain** bivariate analysis of independent variables in relationship to ratings on the modifications scale showed that staff who reported having more influence in their organisations reported more modifications to evidence based practices ($p<0.01$). This finding was also supported in multivariate linear regression modelling ($p<0.05$). **Organisational climate domain**, staff who perceived a lower sense of organisational mission ($p<0.01$), lower sense of organisational cohesion ($p<0.01$) and who experienced more stress ($p<0.01$), reported more modifications to EBPs **Summary of ORC key findings:** i. Influence was found to be the most important variable on the ORC scale in terms of modifications to EBPs ii. Organisational climate is important in terms of the implementation of EBPs iii. A non-ORC variable: staff perception of barriers had the greatest influence on modification of EBPs 9. Good 10. Other findings: Staff who had 5 or more years' experience in the drug counselling field, who worked in programmes funded by CSAT/SAHMSA for a longer period of time, or who reported less frequently adopting new counselling measures and techniques, reported higher levels of modifications when compared to their counterparts. Staff who had implemented Motivational Interviewing (MI) compared to any other EBP, staff who reported higher satisfaction with training and staff who reported having more in house training reported lower levels of modifications made to EBPs. Staff reports of higher barriers in implementing EBPs were highly correlated with higher modifications of EBPs.
1. Lundgren et al. (2012). 2. Barriers to implementation of evidence-based addiction treatment: A national study. 3. United States. 4. To evaluate the relationship between staff perceptions of organisational capacity and their experience of barriers in implementing new evidence based practice (EBP) when controlling for unit characteristics, staff characteristics, and type of EBPs implemented. 5. Cross sectional survey.	6. 510 staff and 296 programme directors from 330 substance misuse treatment organisations (34 organisations were excluded during study). Telephone surveys were conducted with all participants where demographic data was obtained and questions relating to barriers in implementing EBPs was assessed. Organisational readiness to change questionnaires were also completed by participants. 7. 4 EBPs: Adolescent community re-enforcement approach, Motivational Interviewing, Assertive Community Treatment and Cognitive Behavioural Therapy 8. Multi-dimensional concept of ORC (Lehman, Greener, & Simpson, 2002). Texas Christian University ORC-D (for directors) and ORC-S (for staff).	9. **Motivation for change domain:** In bivariate regression analysis, staff who rated their programmes as having higher programme needs ($p<0.001$), and higher training needs ($p<0.01$), reported more barriers in implementing EBPs. Directors who rated their programmes as having higher programme needs ($p<0.001$) and higher training needs ($p<0.001$), reported more barriers in implementing EBPs. Multivariate regression analysis identified that staff who reported high programme needs reported higher barriers in implementing EBPs ($p<0.05$). **Resources domain:** In bivariate regression analysis: staff who rated their organisations as having poorer office environments ($p<0.05$), inadequate staffing resources ($p<0.01$), and inadequate levels of training ($p<0.001$), reported more barriers in implementing EBPs. Directors who rated their office environments as being more inadequate reported more barriers in implementing EBPs ($p<0.05$). **Staff attributes domain:** In bivariate regression analysis: staff who reported having lower levels of influence reported having greater barriers in implementing EBPs ($p<0.05$). **Organisational climate domain:** In bivariate regression analysis: staff who rated their organisations as having poorer mission clarity ($p<0.001$), lower cohesion amongst staff ($p<0.05$), poor communication ($p<0.001$), higher stress levels ($p<0.001$), and less support for change ($p<0.001$), reported more barriers in implementing EBPs. Directors who rated their organisations as having poorer mission clarity ($p<0.05$) and higher stress levels ($p<0.001$), reported more barriers in implementing EBPs. Multivariate regression analysis identified that staff ($p<0.05$), and directors ($p<0.05$), identified higher stress levels as being a significant barrier to implementing EBPs. **Summary of ORC key findings::** i. 11 ORC sub-scales were associated with staff ratings of barriers in implementing EBPs with the organisational climate domain being the most important followed by the resources domain

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Innovation type 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and innovation- Key findings 9. Quality Assessment 10. Further comments/ other key findings
		ii. For both staff and directors, multivariate regression analysis identified stress as being the most significant inhibitor to implementing EBPs 10. Fair. 11. Associated with higher ratings of barriers in implementing EBPs: Working in a programme funded by two state organisations for a longer period of time, working in a rural area, not implementing Motivational interviewing but other EBPs.
1. Lundgren et al. (2011b). 2. United States 3. To compare programme directors and staffs attitudes regarding the usefulness of evidence based practice (EBP). 4. Cross sectional multi-cohort survey	5. 518 staff and 814 programme directors from 296 community based substance misuse treatment organisations. Participating centres had received funding from two distinct bodies. All staff completed a phone interview which assessed staff and characteristics and attitudes to EBPs. and completed the ORC questionnaire 6. Scientifically supported treatments (EBP) 7. ORC (Lehman, Greener, & Simpson, 2002): Texas Christian University ORC-D (for directors) and ORC-S (for staff). Demographic variables including levels of education of staff were also recorded.	8. Programme and staff attitudes agree / disagree with statement: "scientifically supported treatments can be useful". Multivariate analysis results only: **Motivation for change: NS** **Institutional Resources:** Directors: internet ($p<0.000$). Staff: internet ($P<0.01$). Final linear regression model for staff showed that staff ($p<0.05$) and directors ($p<0.05$) working in a programme with higher rated levels of internet resources reported higher agreement with statement. **Staff attributes:** Directors: influence ($P<0.05$) growth ($p<0.000$) Staff: influence ($P<0.01$). Final linear regression model for staff showed that staff working in a programme with higher rated levels of influence reported higher agreement with statement ($p<0.05$). **Organisational climate:** Directors: autonomy ($P<0.05$) Staff: autonomy ($p<0.05$) **Summary of ORC Key findings:** i. For both directors and staff, working in an organisation that had higher levels of access to internet technology were associated with having more positive attitudes towards evidence based treatment ii. For staff having higher levels of influence in their workplace was associated with having more positive attitudes towards evidence based treatment 9. Fair 10. Other findings: For both directors and staff final linear regression models demonstrated that being affiliated to a research organisation and having a higher personal level of education were strongly associated with having positive attitudes to evidence based treatment.

As all of the included studies utilised a version of the same tool, Table 3. 4 has been designed to provide a succinct overview of how ORC domains and subscales are related to the process of innovation adoption. This table highlights important relationships between variables measured by this interpretation of ORC, and the heterogeneity of outcomes explored in the included papers. Discussion of the important findings in this table are discussed throughout this paper. Within Table 3, the overall study findings are summarised and relationships are identified as being either statistically positive (+) or negative (-) in relation to ORC subscale scores. While it is important to note that some studies used a shortened version of the ORC tool, all the statistically significant results which were incorporated into the full summary Table 3. 4 are included here.

Table 3. 4 Overview of relationships between ORC domains, subscales and the process of innovation adoption

Domain	Subscales	Relationship with ORC: (+) = statistically positive relationship, (-) = statistically negative relationship
Motivation for change (MFC)	a) Program needs:	a) **(+)** more commitment to engage in a change process (n=1), membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n=1), a greater preference for training based on scientific evidence (n=1), support for 3 EBPs: treatment manuals, motivational incentives and medications (n=1), more barriers in implementing EBPs (n=1).
	b) Training needs:	b) **(+)** Less training exposure (n=1), more barriers in implementing EBPs (n=1). Greater staff consensus was related to greater commitment to engage in a change process (n=1).
	c) Pressures for change:	c) **(+)** membership of 'isolated' counsellor group=less likely to be exposed to, adopt, or be satisfied with training (n=1). Higher staff consensus was related to commitment to engage in a change process (n=1).
	d) Composite :	d) **(+)** higher training needs (n=1), greater preferences for specific training content (n=1), mean scores used to identify need for program transformation (n=1). Confirmed suitability of program for an intervention as scores were within acceptable percentile ranges (n=1)
Institutional Resources (IR)	a) Offices:	a) (+) Support for non-compliance discharge* (n=1). **(-)** membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n=1), less training exposure (n=1), more barriers in implementing EBPs (n=1).
	b) Staffing:	b) **(-)** a higher commitment to engage in a change process (n=1), membership of 'isolated' counsellor group= less likely to be exposed to, adopt, or be satisfied with training (n=1), more barriers in implementing EBPs (n=1). Higher staff consensus was related to commitment to engage in a change process (n=1).
	c) Training:	c) **(-)** a higher commitment to engage in a change process (n=1), membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n=1), less training exposure (n=1), more barriers in implementing EBPs (n=1).
	d) Equipment:	d) (+) support for confrontation and non-compliance discharge* (n=1). **(-)** higher commitment to engage in a change process (n=1), related to membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n=1), support for one EBP: use of treatment manuals (n=1), more barriers in implementing EBPs (n=1).
	e) Internet:	e) (+) support for 3 EBPs: motivational incentives, treatment manuals, medications (n=1), support for scientifically based treatments (n=1). **(-)** higher commitment to engage in a change process (n=1), membership of 'isolated' counsellor group=less likely to be exposed to, adopt, or be satisfied with training (n=1),training exposure and utilisation (n=1), support for a confrontational approach and non-compliance discharge.
	f) Composite:	f) **(+)** greater satisfaction with training (n=1)**.** **(-)** higher preferences for specific training content (n=1), more training barriers (n=1), mean scores used to identify need for program transformation (n=1). Confirmed suitability of program for an intervention as scores were within acceptable percentile ranges (n=1)
Staff Attributes (SA)	a) Growth:	a) (+) support for one EBP: medications, support for scientifically based treatments (n=1). **(-)** a higher commitment to engage in a change process (n=1), support for a confrontational approach and non-compliance discharge (n=1),
	b) Efficacy:	b) **(+)** a greater preference for training based on scientific evidence (n=1).
	c) Influence:	c) **(+)** a greater preference for training based on scientific evidence (n=1), support for three EBPs: integrated mental health services, treatment manuals and motivational incentives (n=1), more modifications to EBPs (n=1), support for scientifically based treatments (n=1). **(-)** a higher commitment to engage in a change process (n=1), support for a confrontational approach and non-compliance discharge, more barriers in implementing EBPs (n=1). Higher staff consensus related to commitment to engage in a change process (n=1).
	d) Adaptability:	d) **(+)** a greater preference for training based on scientific evidence (n=1), support for two EBPs: treatment manuals and integrated mental health services. **(-)** membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n=1).
	e) Composite:	e) **(+)** greater satisfaction with training (n=1). **(-)** mean scores used to identify need for program transformation (n=1). Confirmed suitability of program for an intervention as scores were within acceptable percentile ranges (n=1).
Organisational Climate (OC)	a) Mission:	a) **(+)** greater training satisfaction (n=1), more trial use of an innovation post-training (n=1), improved skills post-training (n=1), greater rapport with clients as a result of the training (n=1), support for two EBPs: use of treatment manuals and integration with mental health services (n=1), more readiness for a change initiative (n=1). **(-)** more modifications to EBPs (n=1), more barriers in implementing EBPs (n=1).
	b) Cohesion:	b) **(+)** greater rapport with clients as a result of the training (n=1), support for one EBP: integration with mental health services (n=1).

		(-) higher commitment to engage in a change process (n=1), predictor of failure to implement treatment innovation (n=1), more modifications to EBPs (n=1), more barriers in implementing EBPs (n=1).
	c) Autonomy:	Greater staff consensus related to more commitment to engage in a change process (n=1).
		c) **(+)** less support for the use of one EBP: motivational incentives (n=1), support for scientifically based treatments (n=1).
	d) Communication:	Greater staff consensus related to commitment to engage in a change process (n=1).
		d) **(+)** greater rapport with clients as a result of the training (n=1).
		(-) higher commitment to engage in a change process (n=1), support for one EBP: integration with mental health services (n=1), more barriers in
	e) Stress:	implementing EBPs (n=1).
		e) (+) higher commitment to engage in a change process (n=1), predictor of failure to implement treatment innovation (n=1), support for one EBP: integration with mental health services (n=1), more modifications to EBPs (n=1), more barriers in implementing EBPs (n=1).
		(-) more support for confrontation and non-compliance discharge**(n=1).
	f) Openness to Change:	Higher staff consensus related to greater commitment to engage in a change process (n=1), more readiness for a change initiative (n=1).
		f) **(+)** a greater preference for training based on scientific evidence (n=1), post training satisfaction (n=1), trial use of an innovation (n=1), improved skills post-training (n=1), greater rapport with clients as a result of the training (n=1)
		Higher staff consensus related to greater commitment to engage in a change process (n=1)
	g) Composite	**(-)** higher commitment to engage in a change process (n=1), more barriers in implementing EBPs (n=1)
		g) **(+)** better facilities and climate (n=1), lower preferences for specific training content (n=1), lower barriers to training (n=1)
		(-) membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n=1), mean scores used to identify need for program transformation (n=1).
		Confirmed suitability of program for an intervention as scores were within acceptable percentile ranges (n=1).

* Fuller et al, (2007) state that better office and computer facilities may have been available, this did not necessarily provide access to the internet.

3.1.3.2 Synthesis of Results

Exposure and adoption of training

Six papers were ultimately considered to be primarily related to training and the adoption of innovations related to training. These studies explored areas such as training needs or preferences, exposure to training, satisfaction with training or utilisation of training (Courtney et al., 2007, Joe et al., 2007, Lehman et al., 2012a, Lundgren et al., 2011a, Rowan-Szal et al., 2007, Simpson et al., 2007). The six studies that related to training represented a range of outcome measures and methodologies, but the approach taken by Courtney et al. (2007) was unique in that they utilised ORC measurements, both as a feedback for program directors in a training workshop, but also to predict engagement in a follow up quality improvement initiative. This paper demonstrates that ORC measurements may be incorporated effectively into training events to highlight areas for organisational improvement, thus enhancing an overall 'change message'.

Lehman and collegues (2002) first found that higher program readiness for change was associated with poorer program ratings in the motivation for change domain, and the results in the present review support this finding. Deficits identified in the motivation for change domain were related to staff having more specific training needs identified, and a higher preference for training in scientifically based approaches (Lundgren et al., 2011a, Rowan-Szal et al., 2007). This was also predictive of the likelihood of staff engaging in a change initiative subsequent to a training event (Courtney et al., 2007). In programs where staff scored highly in motivation for change domain, and identified poorer institutional resources, staff were also less likely to have had exposure to training (Lehman et al., 2012a). Specifically, having greater access to e-communication was important, and related to both more exposure to, and better utilisation of training (Lehman et al.,

2012a). Staff recognition of program deficits can be positive provided opportunities are made available for change to occur.

Staff also express a greater preference for scientifically based training where they see themselves as having more opportunities for growth, higher adaptability, greater efficacy and in particular more influence (Courtney et al., 2007, Lehman et al., 2012a, Lundgren et al., 2011a). This was attributed to their belief that their personal attributes will allow them to adopt these interventions in practice, subsequent to a training event. Staff perceptions of positive program climate, including their organisations as having a greater openness to change, was an important predictor of staff support for scientifically based training (Lundgren et al., 2011a). As with appraisal of their own skillsets and attributes, staff support for scientifically based innovations is conditional on their appraisal of anticipated support for training implementation. These findings are consistent with conceptual interpretations of ORC where not only being *willing*, but also being *able* is important (Weiner et al., 2008). Having better program resources and better staff attributes is also related to higher training satisfaction with and lower barriers for training adoption (Rowan-Szal et al., 2007).

The organisational climate domain was particularly important in determining the success of innovation adoption. Satisfaction with training has been linked to training adoption, and is higher in programs which have a more favourable organisational climate (Joe et al., 2007, Simpson et al., 2007). In addition to this, the organisational climate domain predicts how successfully training can be adopted, and it is strongly related to the likelihood of engaging in the process of organisational change (Courtney et al., 2007, Joe et al., 2007). In the only longitudinal study included in this review, Courtney et al. (2007) describe a positive relationship between organisational climate and

training adoption, but also identify trends which relate organisational climate with training satisfaction, adoption and improved client outcomes.

In relation to exposure to and adoption of training, staff who perceive themselves as having more adverse working conditions, not only have a greater desire for change but can also identify more specifically, at least through training requirements, how some of that change can occur. A discrepancy in staff perceptions of current and potential future conditions, can provide them with the motivation to embrace and adopt new innovations, but in practice the opportunities for training in these programs is often limited. Organisational climate provides basis on which innovation or change can be sustained.

Adoption and implementation of innovations

Eight studies focused on the adoption and implementation of treatment innovations. Four of these studies were cross sectional surveys which examined staff views on the utility of, levels of modifications to, and barriers in implementing evidence-based practice (Lundgren et al., 2013, Lundgren et al., 2012, Lundgren et al., 2011b, Fuller et al., 2007). A mixed methods study by Henry et al. (2010) assessed staff attitudes to a proposed treatment innovation using qualitative interviewing and ORC measurements, while two studies described the process of implementation of new innovations where ORC was measured and reportedly influenced this process, but the utility of the ORC tool in these descriptions is not clear (Elarabi et al., 2014, D'ambrosio et al., 2006). Finally, an RCT by Crits-Christoph et al. (2011) primarily focused on a trial of a patient feedback mechanism where ORC was a dependent variable. This RCT did not yield any significant results in relation to ORC.

Overall, more favourable ratings in all ORC domains were associated with positive attitudes towards treatment innovations and fewer perceived barriers in terms of their implementation (Lundgren et al., 2012, Fuller et al., 2007). Programs with higher needs in the motivation for change domain reported more support for the use of evidence-based practice but also greater barriers in their implementation (Lundgren et al., 2012, Fuller et al., 2007). These are findings which are consistent with papers which were previously related to training exposure and adoption (Lundgren et al., 2011a, Rowan-Szal et al., 2007). A notable finding is that having better access to e-communication was of particular importance for supporting the use of evidence-based practices (Lundgren et al., 2011b, Fuller et al., 2007). This finding is supported by studies discussed previously relating to training exposure and adoption (Lehman et al., 2012a). For staff, having ease of access to a source of training and information such as the internet, has an influence on both innovation exposure and adoption.

An important mediator of innovation adoption was the role of influence in the staff attributes domain. For both program directors and staff, having more influence (and also more growth opportunities for directors) was associated with greater support for scientifically based treatment, while staff who reported having more influence also reported making more modifications to evidence-based practice (Lundgren et al., 2013, Lundgren et al., 2011b, Fuller et al., 2007). In this context, when variables which are not related to the use of the ORC scale are incorporated, staff who are longer in post, who report less frequently adopting new measures and who have greater influence, also report making more modifications to evidence-based practice (Lundgren et al., 2013). Conversely, having lower influence and fewer opportunities for growth was associated with more support for non-compliance discharge, which is viewed as a less positive non-evidence-based

approach (Fuller et al., 2007). The role of staff influence in the process of innovation adoption is important, may have both positive and negative implications, and is worthy of further investigation.

As with exposure to an adoption of training, the organisational climate domain was important. Better mission clarity, more staff cohesion and better organisational communication, ensured that staff support the use of EBPs (Fuller et al., 2007). Conversely, support for a confrontational approach to clients and non-compliance discharge, was higher where, in the organisational climate domain, staff perceived that they had less autonomy and less stress (Fuller et al., 2007). An association between low stress, which should typically be a positive finding, and support for non-compliance discharge and confrontation may be attributable to a lack of pressure to change in these programs (Fuller et al., 2007). More expectedly, high stress levels in the organisational climate domain, were associated with greater perceived barriers for the implementation of evidence-based practice (Lundgren et al., 2012).

The application of ORC findings in the process of implementing quality improvement initiatives remains unclear and studies which report using the ORC tool are largely descriptive and ambiguous in their reporting of specific ORC findings (Elarabi et al., 2014, Henry et al., 2010, D'ambrosio et al., 2006). However, authors attest to the utility of the ORC tool both in terms of determining if an innovation is set to fail or to determine if an organisation is ready for an initiative or not (Elarabi et al., 2014, D'ambrosio et al., 2006). In this respect, it has been suggested that findings in relations to organisational climate, specifically in relation to poor team cohesion and high stress can predict the success or failure of an organisation to adopt a new innovation

(D'ambrosio et al., 2006). Additionally, it has been suggested that the ORC tool may be utilised effectively to identify specific program dynamics prior to exposure of new innovations in order to ensure that training and implementation is tailored to unique organisational needs (Henry et al., 2010).

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Factors not measured by ORC

Papers in this review included many other findings which were not measured by ORC but are important to the process of innovation adoption, not only when planning or executing training, but also when planning and resourcing programmes. Programme size and location, research affiliation and the educational levels of staff were important factors. Programmes located in rural areas were found to have identified more barriers to implementing EPB's than those in urban areas (Lundgren et al., 2012). Programme affiliation to a research organisation (Lundgren et al., 2011b). Having higher personal levels of education was strongly associated with having positive attitudes to the adoption of evidence-based treatment (Lundgren et al., 2011b). Recruiting staff with higher educational levels is important in terms of supporting training adoption, but it is unknown as to what extent this can influence programme cohesion and staff consensus during the process of innovation adoption in organisations with a diverse range of employees (Lundgren et al., 2011a, Courtney et al., 2007).

Becoming affiliated to a research organisation may be something which is more challenging to achieve in rural areas, and an issue which may be addressed successfully through technological developments, thus ensuring exposure to educational and research opportunities for all programme types. Ascertaining the optimum size for a treatment programme is another area worthy of consideration for planners. Smaller and more poorly financed programmes are at a particular disadvantage in terms of their level of exposure to, and utilization of, new innovations (Lundgren et al., 2012). Staff who are more frequently exposed to training opportunities and have greater satisfaction with training report that they make fewer modifications to new innovations (Lundgren et al., 2013). The type of innovation proposed is also important, as staff identified that they made

fewer modifications to motivational interviewing compared to other EBPs but (Lundgren et al., 2013, Lundgren et al., 2012). It is unclear if this is related to either the education levels of staff or the frequency of exposure.

Factors relating to staff demographics, team cohesion and workload stress are influential. Staff who identify with their colleagues and who feel a part of a professional community are more likely to have been exposed to training and to feel capable of implementing their learning (Lehman et al., 2012a). Unsurprisingly, staff with higher workloads or more stress reported being less capable of supporting new innovations (Lehman et al., 2012a). Similarly, those who were longer in their positions, had higher burnout or had more contact with clients were more likely to report barriers in training adoption (Lehman et al., 2012a). Overall, there is a dearth of studies which examine the effect of high workloads, stress and burnout, decreased team cohesion and programme size or structure have an impact on client outcomes, or the process of innovation adoption, in substance misuse treatment. The educational levels of staff and skill mix are also important. Findings here, which were beyond the scope of the ORC tool, but related to organisational systems and the size, location and affiliations of programmes are worthy of further exploration if we are to build more knowledge on optimum program configuration.

3.1.4 Discussion

We systematically reviewed the last fifteen years of scientific research in relation to organisational readiness to change, where it was measured, and its relationship with the process of innovation adoption in addiction services. For this review, the four stages of adoption were considered to be: exposure, adoption, implementation and integration into practice. These stages were rarely directly

identified outcomes in each stage of this process, and this is reflective of a lack of psychometrically sound measures for the adoption and implementation of treatments (Garner, 2009). The heterogeneity of the studies included in this review and the diversity of findings made cross-comparison of results challenging and conducting a meta-analysis using ORC findings was not possible. There is a lack of evidence on how ORC can affect the sustained use of innovations over time, and only one study included in this review focused on this, but with some promising results (Simpson et al., 2007).

Workforce and organisational characteristics can significantly influence the process of innovation adoption in substance misuse treatment programs (Glasner-Edwards and Rawson, 2010). Based on the findings reported here, we can conclude that the variables measured using the ORC tool developed by Lehman et al. (2002) can be predictive of success or failure in the process of innovation adoption. Conducting an ORC assessment prior to training or implementation of innovations can provide useful information for planners in the substance misuse field. Using feedback from ORC assessments can provide valuable information for strategic planning and this feedback in itself could also motivate programs to change (Courtney et al., 2007). Ultimately, ORC variables could also have significant implications for client outcomes, particularly in relation to measurements of organisational climate.

The path to adopting an innovation and sustained implementation of a change process involves a complex interaction between the motivation to change, having the resources to change, having the right staff attributes and the organisational climate to support the change. Assessing organisational readiness to change as a part of the process of facilitating effective innovation adoption in addiction

treatment is preferable and would help to more effectively target scarce resources (Glasner-Edwards and Rawson, 2010). Findings in this review support the view that resources would be more effectively directed to addressing organisational deficits before engaging in a process of innovation adoption. This view is consistent with other findings that exposure to training, while important, is not sufficient on its own (Garner, 2009, Miller et al., 2006). This has important implications for planners and trainers in practice, where training is often viewed as a singular event.

The variety of methods employed in these studies testifies to the flexibility of the ORC tool developed by Lehman et al. (2002). However, there is a general lack of conceptual clarity in relation to ORC and authors have argued that there are as many conceptualisations of ORC as there are researchers studying the phenomenon (Stevens, 2013). It should also be taken into consideration that in healthcare, researchers have only recently begun to apply models of ORC, which are typically multi-faceted and complex. As such, there is still a lack of methodological detail around how theoretical perspectives, frameworks and models can be operationalised (Attieh et al., 2013). This paper illustrates that one interpretation of ORC by Lehman and colleagues (2002) has been utilized relating to innovation adoption in the substance misuse field. This interpretation of ORC has principally been utilised as a general measure of readiness or organisational functioning, while other interpretations of ORC may view the valence of a specific change, or staff perceptions of 'the change message', as being a key component (Weiner, 2009, Armenakis et al., 1993). Although it has been widely used, the interpretation of ORC by Lehman et al. (2002) is not definitive and the implications for the differences in interpretations of ORC in practice remain unclear.

It is evident (see Appendix 3, Table 2) that positive staff perceptions of ORC across different subscales and ORC domains are related to similar findings, such as the preferences around or support for the use of EBP's. This suggests that there may be a number of causal relationships between ORC domains. The extent of this causal relationship between domains remains unclear, and only one study attempted to explore this (Joe et al., 2007). In this study, counselors with the poorest perceptions of climate and attributes were categorized into an 'isolated' group as opposed to 'integrated' or 'exceptional'. The authors support the hypothesis that there are causal relationships between ORC domains, as perceptions of resources and program needs were predictive of group membership. This finding may have implications for those who wish to improve the overall utility of this tool. Further exploration of these relationships could help planners to tailor interventions specific to an organisation's needs. In future, if an ORC assessment is to become the norm when planning and implementing new innovations, a valid and reliable brief ORC assessment tool may be more suitable for busy clinical environments (Khan et al., 2014).

In programs where staff express that they have higher motivation for change and poorer resources, they also have more specific training needs and have a greater desire for scientifically based training. The same staff are likely to have been exposed to training less frequently, identify that there are more barriers in respect of training implementation, and tend to work in organisations with a climate that is less favourable in terms of supporting the process of innovation adoption. Organisations with poorer resources are more likely to support inappropriate treatment approaches and be more confrontational towards clients (Fuller et al., 2007). The importance of staff having access to resources such as e-communication in order to facilitate the process of adopting new innovations is clear (Fuller et al., 2007, Lehman et al., 2012a, Lundgren et al., 2012). We know

that internet-based learning in healthcare is at least as effective as traditional training (Sinclair et al., 2016, Cook et al., 2008) and that the frequency of exposure to training and new innovations is also an important determinant of innovation adoption (Lundgren et al., 2013). This review did not find that having access to e-communication increases the frequency of exposure to training, but the benefits of having easy access to up-to-date information are clear, and the findings on the importance of having workplace internet access is worthy of further exploration. It may also be the case that changes technology, such as the increased use of smartphones, tablets and improved wi-fi access, has increased staff access to e-communications since these studies were conducted. The studies included in this review do not demonstrate with consistency that there is a causal relationship between having access to e-communication and more overall resources.

Staff attributes, such as having more opportunities for growth and in particular having greater influence with peers, are also important factors in the adoption process (Lundgren et al., 2013, Lundgren et al., 2012, Courtney et al., 2007). It may be necessary to tailor the process of innovation adoption to the specific needs of particular staff. Feeling influential in your workplace is important in terms of supporting innovations but can also have negative implications for more experienced staff (Fuller et al., 2007, Lundgren et al., 2013). In this context, studies showed that staff who see themselves as having greater attributes will support innovation adoptions more effectively, but experienced staff who see themselves as having more influence with their colleagues can show less fidelity to new practices. Where ORC was assessed in other studies, programs are significantly better at engaging clients where counsellors perceive themselves as having more influence with peers (Greener et al., 2007, Lehman et al., 2002). The implication is that those who see themselves as having more influence, possess personal attributes with which they can more effectively engage

clients (Greener et al., 2007). In business and public sectors contexts, more empowered employees have been shown more to be more supportive of organisational change (Fernandez and Moldogaziev, 2011, Butts et al., 2009). Arguably, in the substance misuse treatment context, staff who view themselves as being more influential with their peers are more likely to be empowered to support innovation adoption, but this is a finding which merits further attention. Overall, the influence of these opinion leaders in terms of adopting new innovations can be both good and bad and warrants consideration(Greenhalgh et al., 2004).

A positive organisational climate can effectively influence the overall functioning of organisations (Zhang and Liu, 2010). This review certainly supports this conclusion with staff ratings of stress having a particularly important influence. Programs in which staff have had more favourable views of organisational climate clearly have a particular advantage in terms of adopting new practices. Programs with favourable organisational climates and less stress are more likely to support the process of innovation adoption and change (Joe et al., 2007, Lundgren et al., 2012). Most importantly, a positive organisational climate has been shown to have implications for sustaining the use of innovations, and improving client outcomes (Simpson et al., 2007). Perceived deficits in organisational climate, such as greater perceived organisational stress or poor openness to change, can also increase the likelihood of staff wanting to engage in a change process. It could be argued that areas such as mission clarity, communication and openness to change can be addressed in an organisational setting without having to call on significant additional resources.

Assessing ORC variables in conjunction with other program or staff related factors should provide richer information for treatment program design, such as the need to consider the quality of

training, staff workloads and stress or the need to hire more educated staff if innovations are to be adopted successfully (Joe et al., 2007, Lehman et al., 2012a, Lundgren et al., 2011a, Lundgren et al., 2012). A more highly resourced program with a favourable organisational climate, that is affiliated to a research institution is much more likely to be successful in supporting new innovations. When compared to other areas of healthcare, staff working in substance misuse programs are at particular risk of high stress and burnout (Oyefeso et al., 2008). Staff who have more reasonable workloads are not at risk of burnout and are better suited to supporting the use of innovations. Also identified in this review, is that more educated staff are also more likely to support innovations in practice, but it is also important to consider the staff skill mix in terms of how it may impact on staff cohesion (Courtney et al., 2007). There are also studies which have shown that those with lower levels of education are more likely to have positive views of organisational climate and resources (Krull et al., 2014). This contradiction may provide a direction for future research. Program director's perceptions in ORC domains can also be different from those of their staff and this may have implications for planners. The type of innovation proposed can also determine its success or failure within the same organisation. Some innovation types, such as motivational interviewing, were shown to be more likely to be successfully implemented than others.

It is important to acknowledge that other reviews have identified successful implementation strategies which may be of interest to planners (Powell et al., 2012, Rye and Kimberly, 2007). Identifying staff champions, increasing staff involvement in change, increasing incentives, developing academic partnerships and improving the physical working environment and audit have been identified as measures which can successfully improve the likelihood of implementation

of new innovations. Multi-faceted approaches, which include strategies such as individual coaching and provision of ongoing performance feedback or providing incentives to the wider organisation may also be effective (Rycroft-Malone et al., 2004). Proposed solutions such as these, require further exploration and development subsequent to the measurement of ORC. This will help to increase the utility of ORC tools in practice. It is evident from this review that each organisation has its own set of unique and complex dynamics. Developing a prescriptive approach to addressing each ORC attribute is likely to have limited success. Overall evidence on how to address organisational deficits as they arise is notable for its absence across healthcare research and requires further development.

3.1.5 Limitations

This review was restricted to examining innovation adoption and ORC substance misuse programs only and excluded other areas of healthcare and industry. A broad range of change readiness literature which did not relate to ORC was therefore excluded from this review. In studies beyond the scope of this review, ORC has been related to improved client outcomes (Greener et al., 2007). Inclusion of these studies may have provided further validation for the use of the ORC tool as an assessment measure. A review which had a broader scope would have yielded greater potential use for both researchers and practitioners in the field. ORC should not be viewed as a static concept and should be measured over time as organisational circumstances evolve (Stevens, 2013, Rowan-Szal et al., 2007, George and Jones, 2001). The majority of the studies included in this review were cross sectional. Many of the findings in these papers were self-reported and the cross-sectional nature of these studies did not allow follow up on the sustained implementation of innovations in practice. Convenience sampling was used and most of the studies were conducted in the US,

therefore the generalisability of the results is not clear. However, it is promising that three international studies which did not fall within the scope of this review, used the Lehman et al. (2002) tool to measure ORC in substance misuse programs, and have yielded results which were consistent with those found in the US (Bowles et al., 2011, Rampazzo et al., 2006, Simpson et al., 2009).

3.1.5 Conclusion

Despite the heterogeneity of methodologies and outcome measures, this review found that the overall evidence for the use of ORC measurements in predicting the adoption of innovations is positive. Staff perceptions of ORC are significantly associated with the process of innovation adoption. Measuring ORC in conjunction with other variables provides an enhanced ecological perspective of how substance misuse treatment programs work. Utilizing the ORC tool included in this review can provide key information on how the innovation process can be systematically enhanced. Unfortunately, there is minimal evidence for utilising ORC measurements in the sustained practice of innovations and in quality improvement initiatives, and more work is required in this regard. More methodologically robust prospective longitudinal studies which carefully examine the relationship with ORC and the entire process of innovation adoption are needed. In the absence of resources for large studies, which would require multivariate analysis, opting for a mixed methods approach to investigating effective innovation adoption may be preferable. A lack of conceptual clarity around ORC continues to present additional challenges for researchers and practitioners but the tool developed by Lehman and colleagues provides a good foundation for progress. Standardized measures for the innovation adoption process require further development. Overall, planners should consider addressing infrastructural deficits before wasting resources on

training, and the overall focus should shift to examine the effectiveness of complete innovation adoption once training is provided.

3.2 The relationship between staff perceptions of organisational readiness to change and client outcomes in substance misuse treatment programmes: A systematic review.

3.2.1 Significance and Aim

It has been established that providing quality treatment in substance misuse is important, and that some substance misuse treatment services are more effective than others in determining outcomes for clients (Simpson et al., 2009, Ghose, 2008, Broome et al., 2007). More effective programmes yield greater levels of psycho-social functioning and reductions in drug and alcohol use through more effective engagement and retention of clients (Greener et al., 2007, Gossop, 2006b). Increased retention in treatment, in particular for problem opiate users, is associated with a reduction in a wide range of drug use related risks including mortality (Darker et al., 2015, Ghose, 2008, Gossop, 2006b). The societal benefits of providing treatment are also well known, and it is accepted that the provision of treatment offers significant economic benefits through reducing harms, such as the spread of blood borne viruses and a reduction in criminal activity (Gossop, 2015, Comiskey et al., 2009, Godfrey et al., 2004).

We still know relatively little about the components, process and dynamics of substance misuse treatment. Treatment can be difficult to conceptualise, and when calling for further examination of how and why treatment is effective, researchers have often referred to these unknowns in colloquial terms as a ‘black box’ (Gossop, 2006a). This view has been sustained partially because the approach to research which is related to the effectiveness of public health interventions, has

traditionally focused on categorical factors, or disease states. There is a dearth of research that examines the systems which can support the development of effective programmes (Ghose, 2008, Cioffi et al., 2004). Gerstein and Harwood (1990) observed over two decades ago that this was reflected in the main body of research into substance misuse treatment where the question 'does treatment work?' has been asked far more frequently than 'why' or 'how' does treatment work?. Ethridge and Hubbard (2000) suggest that this may have occurred due to the complexity of variables involved and lack of a suitable framework for organising or evaluating services.

Although much of the discussion has been conceptual in its nature, it has been widely acknowledged in the substance misuse treatment field, that the organisation of treatment systems, the workforce and their overall effectiveness is determined by a plethora of dynamic cultural, socio-economic and political influences (Butler, 2011, Roche and Pidd, 2010, Kaplan, 2003). In this context, substance misuse treatment is not exceptional from other areas of healthcare in that the complex infrastructure which sustains treatment programmes, influence how effectively they can deliver care (McLellan et al., 2003). These influences are important, and systemic changes to the structures around treatment programmes which have occurred because of resource allocation or shifts in government policy, have often provoked leaders in the addictions field to voice concerns based on their 'real world' experiences in practice. Unfortunately, tangible evidence to support these concerns may not become available until long after the changes have taken place.

The introduction of competitive tendering in the UK resulted in a multitude of concerns being raised over time by leaders in the addictions field (McGrail, 2014a, McGrail, 2014b, Drummond, 2009, Geel, 2009, Jones, 2009). Their concerns related not just to resource allocation, but also to

the reconfiguration of services, the process of tendering itself, and the consequences of this on patient and staff wellbeing. In a period spanning over ten years, during a time of financial austerity, it has been argued that a shift towards a more functionalist approach to treatment delivery has resulted in more target focused services, increased workloads, a reduction in the numbers of healthcare professionals in services, and lower standards of clinical governance (Middleton et al., 2016, Jones, 2009, Drummond, 2009). In other areas of healthcare, it has been determined that shifts towards a more market driven, functionalist approach have resulted in a reduction in the numbers of trained staff, compromises to effective organisational functioning and other systemic compromises, which have resulted in detrimental outcomes for patients, including increased mortality (Francis, 2013, McCloskey and Diers, 2005). In substance misuse treatment internationally, there is a lack of empirical evidence on the impact of how changes like these can affect clients and staff.

In Europe, per capita, both the UK and Ireland have had particularly high and increasing rates of drug related mortality. Over the period 2004-2014, Irish data shows increases in drug related deaths of 62% (Lynn and Lyons, 2016). In the UK, between 2012 and 2015, drug deaths by poisoning increased by 65.7% while opiate related deaths increased by 107% (Office for National Statistics, 2016). The increase in drug related deaths in the U.K. has been partially attributed to changing demographics of drug users and the availability of more lethal drugs (Public Health England, 2016). Irish analysis also discusses high mortality figures in the context of the changing characteristics of the drug using population (Lynn and Lyons, 2016). However, in the UK, concerns raised earlier by leaders in this field regarding the detrimental effects of service re-configuration on clients, such as increased mortality, have gone largely ignored (Middleton et al.,

2016). The absence of quality data on how organisational factors such as resources, needs, governance and organisational climate can determine client outcomes in substance misuse treatment services, has arguably allowed policy makers and others to easily prioritise change based on short term financial priorities (McGrail, 2014a). It has been argued that this has resulted in a deterioration in the quality of treatment services. Paradoxically, reducing expenditure on treatment is likely to have resulted in an increase of total costs which will be borne in other areas, such as the criminal justice system (Godfrey et al., 2004).

Substance misuse treatment programmes operate as a part of a complex eco-system, and over several decades, attempts have been made to understand treatment delivery from a systemic perspective (Roche et al., 2013, Ghose, 2008, Simpson and Dansereau, 2007a, Gossop et al., 2003, Mulvey et al., 2003, Baker and Roche, 2002, Roche, 2001, Ethridge and Hubbard, 2000). Effective measurement of entire systems, which incorporate a multitude of dynamic socio-political and economic variables is problematic, as treatment effectiveness is influenced through a multitude of complex interdependent factors. Despite this, if we are to optimise the resources available to us in order to provide better treatment, it is imperative that we develop a better understanding of what these factors are, and how they inter-relate. To prioritise focused and effective efforts to improve services, Simpson et al. (2009) argue that it is also of paramount importance to understand which aspects of organisational structures and treatment processes are better than others.

Client outcomes at an organisational level, have been shown to be influenced by factors such as the competency, education and training of staff, prescribing practices, quality of therapeutic relationships, client characteristics and attitudes, resources, workload, motivation and

organisational functioning (Darker et al., 2015, Kelly et al., 2010, Meier et al., 2005, Simpson, 2004, Bell, 2002, Heinrich and Lynn, 2002, D'Aunno and Vaughn, 1995). There is still not enough evidence to show how many of these can be developed systematically (Bell, 2002). A focus on systems and their dynamics has resulted in a conceptualisation of organisational frameworks for addiction treatment services. These conceptualisations have incorporated factors such as policy, organisations, teams, individual skills, experience and training (Roche and Pidd, 2010, Simpson, 2004). However, understanding and effectively influencing this entire system presents a significant challenge to researchers and practitioners. Further understanding of the factors which affect 'how' and 'why' treatment works is still required. In response to this, advocates of a systemic approach have suggested measuring the success or failure of systemic changes at the organisational level, which is at the interface between the client, their treatment programme, and the determinants of effective treatment (Jacobs and Hawley, 2009, Kaplan, 2003).

Across the business and healthcare sectors, organisational readiness to change (ORC) is widely recognised as one of the most important concepts regarding organisational success (Ford and Foster-Fishman, 2012, Weiner et al., 2008, Armenakis et al., 1993). In contrast to a functionalist interpretation of organisations, this 'human relations' based concept acknowledges that human emotions and interpersonal dynamics are important components of effective organisational functioning (Burnes and Cooke, 2012). In a range of settings across the substance misuse field, ORC has been measured in conjunction with other variables to effectively describe organisational functioning (Simpson et al., 2009). Several of these studies have utilised the ORC questionnaire developed by Lehman et al. (2002). This tool measures areas of organisational functioning such as motivation, staff attributes, institutional resources and organisational climate and several studies

have found these scales to be predictive of client engagement (Guerrero et al., 2015, Lehman et al., 2012b, Greener et al., 2007). The focus of this review is to analyse empirical papers which examine the relationship between all interpretations of ORC when it is measured, and client outcomes in substance misuse treatment. Client outcomes were interpreted as being any client related measures impacted by accessing substance misuse treatment services.

3.2.2 Methods

A systematic literature search was performed following PRISMA (Preferred reporting items for systematic reviews and Meta-analysis) guidelines (See
Figure 3. 2 for PRISMA flow diagram). The search strategy was developed in conjunction with an information specialist and was tailored to find papers relating to organisational readiness to change and substance misuse treatment programmes. Terms used in the search were combined using the Boolean terms AND/OR as appropriate (see Table 3. 1 for search strategy).

3.2.2.1 Eligibility Criteria

Peer reviewed academic papers published in the English language from 2001 to 2016 were searched for using the electronic data bases MEDLINE, PsychINFO, SOCindex and Business Source Complete. This search generated 1770 hits which were added to an electronic reference manager system where duplicates were removed, and 1585 papers remained. The papers were independently screened by two investigators (AH,PK) by title and abstract. Only papers which did not relate to ORC and substance misuse treatment were excluded initially. Following this, the full text of selected papers was appraised. Reference lists of included papers were also checked for potential papers and five papers were deemed suitable for full text review. None of these five

papers met the inclusion criteria for this review. A third reviewer (JH) was available for arbitration in resolving discrepancies if necessary.

3.2.2.2 Study Selection and Data extraction

Study designs where organisational readiness to change in substance misuse treatment programmes was measured were included where its measurement was related to any treatment related benefit or outcome (see Outcomes measured). All treatment related benefits or measures as described by included papers were considered as eligible, where they were related to organisational readiness to change. Due to differences in their organisational structures and the determinants of these structures, it was decided to exclude papers which related specifically to correctional facilities, adolescent only services, or mental health treatment services. Where data relating to ORC could not be extracted, pilot studies, theoretical papers, study protocols and studies investigating construct validity were also excluded. Summary data tables were developed with the following headings: author, country, aim, study design, sample/detail, outcome, instruments used and definition of ORC, relationship between ORC and outcomes; key findings, quality assessment and further comments/ other key findings. Following this, the findings were narratively synthesised using both the original papers and key data from the completed tables.

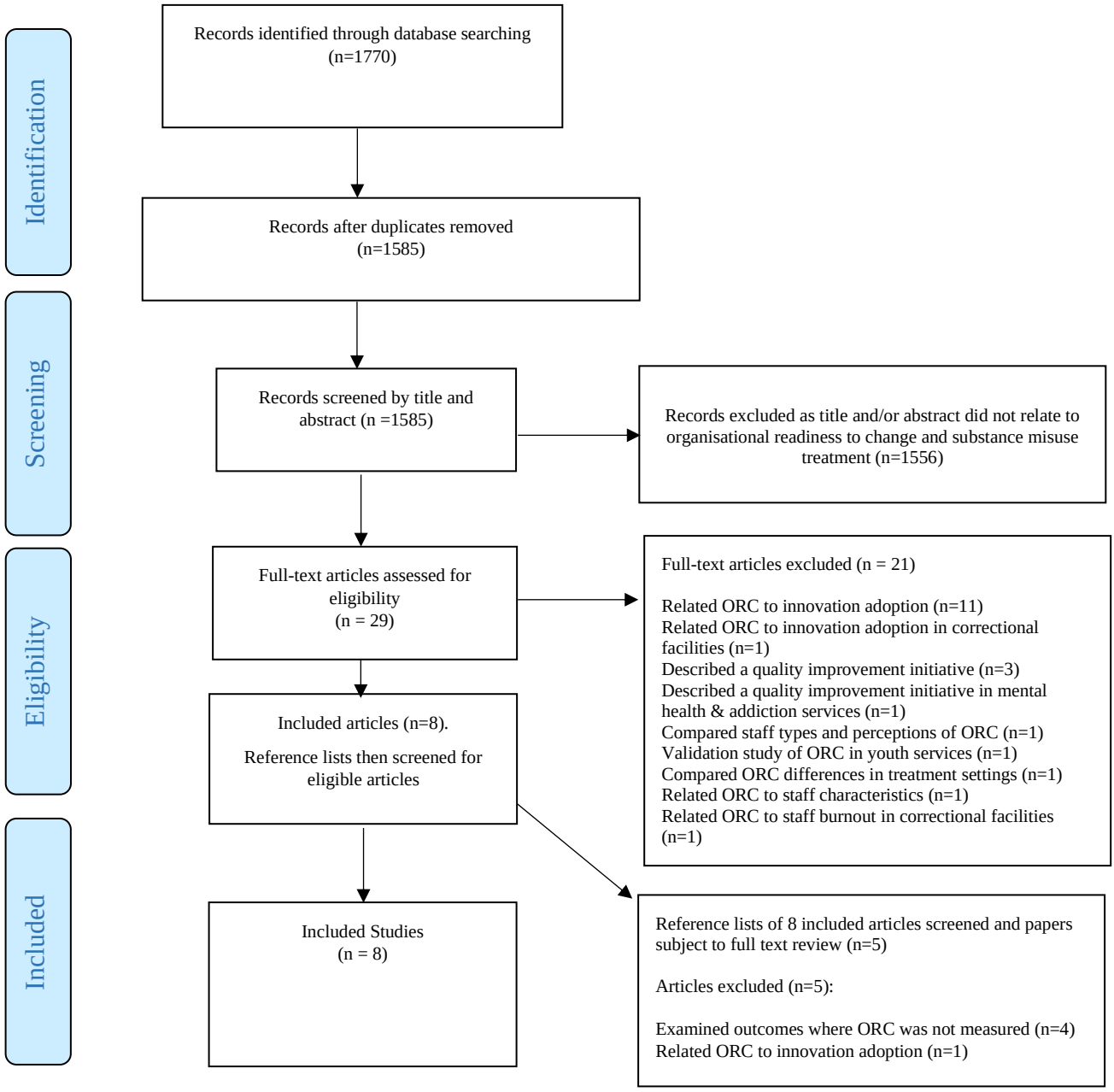


Figure 3. 2 PRISMA flowchart illustrating the search process and number of included papers

3.2.2.3 Quality Appraisal

In order to reduce the risk of bias and increase rigour in systematic reviews it is important to use a quality appraisal tool to assess included papers (Jarde et al., 2012) Two investigators (PK,KD) independently quality assessed the included papers using the NIH Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies (National Heart Lung and Blood Institute, 2016). The methodological quality of all the included papers was graded according to fourteen criteria. Using these criteria, rigour was assessed in areas such as eligibility criteria, outcome measures, timeframes, exposures, and sample size. A score was then calculated based on the quality of the studies and was ranked as poor (0%), fair (100%) or good (0%). Overall, response rates in these papers varied and while inclusion/exclusion criteria were rarely stated, the large samples sizes give some reassurance of representativeness and generalisability.

3.2.3 Results

A total of 1,585 articles were retrieved after removal of duplicates and 8 studies were identified as eligible. All reference lists from included papers were checked and five further studies were subject to full text review but did not meet the inclusion criteria for this study. All of the eight included studies were of cross-sectional study design with one of these using mixed methods, one study was conducted in the United Kingdom with the remainder being conducted in the United States. The studies were conducted across a range of settings which included community outpatient drug free and substitute prescribing services.

3.2.3.1 Study Characteristics

Instruments used

All of the eight studies measured organisational readiness to change using the full tool or a version of a tool developed by Lehman et al. (2002), see: http://ibr.tcu.edu/forms/organizational-staff-assessments/. The ORC assessment tool (Lehman et al., 2002) of organisational needs and functioning, used in all of these studies, has four domains which include eighteen subscales: (i) Motivation for change (needs/pressures): programme needs, training needs, pressures for change (ii) Resources: Offices, staffing, training, equipment, internet (iii) Staff Attributes: Growth, efficacy, influence, adaptability (iv) Organisational Climate: Mission, cohesion, autonomy, communication, stress, openness for change. Within the eighteen subscales, this tool includes a total of one hundred and eighteen scaling questions. For an overview of the domains and subscales measured using the ORC assessment tool, (see Appendix 4, Figure 2). Other measurement tools which were utilised in the included studies were the Client Evaluation of Self and Treatment tool (Joe et al., 2002), which was used in four of the studies and the Multi-Factor Leadership Questionnaire (Edwards et al., 2010) which was used in three of the studies. Other tools used included a Therapeutic Alliance Measure (Crits-Christoph et al., 2004), a shortened version of the Addiction Severity Index (McLellan et al., 1980), a Cultural Competence Self-assessment Questionnaire (Mason, 1995), the Programme Identification Form (Lehman et al., 2002) and a questionnaire on community work practices based on measures developed by Bryk et al. (1999).

Outcomes measured

A comprehensive overview of all of the eight included papers is provided in Table 3. 5 A wide range of client outcomes were assessed and these included client satisfaction with treatment, therapeutic alliance, participation in treatment, level of peer support, waiting times, treatment

retention and improved access to satellite services for clients. A number of findings related to areas such as client characteristics, service type and staff workloads which were not measured by ORC but were assessed in the included studies. Four studies examined the relationship between ORC and client engagement with treatment (Simpson et al., 2009, Broome et al., 2007, Greener et al., 2007, Lehman et al., 2002) using the Client Evaluation of Self and Treatment (CEST) tool developed by Joe et al. (2002). Due to the heterogeneity of sample populations and settings in these four papers, a meta-analysis was considered to have limited value. The CEST tool has 16 (5 to 12 item) subscales in four domains: treatment motivation, psychological and social functioning, and client engagement. All of these papers reported findings from the client engagement domain only.

The client engagement domain includes sub-scale measurements of client satisfaction with treatment, counsellor rapport, level of participation in treatment and peer support. Joe et al. (2002) describes counsellor rapport and the therapeutic relationship as being the same construct and this paper will make the same interpretation. A fifth study by Crits-Christoph et al. (2011) assessed how patient, therapist and programme characteristics (using ORC measurements) influenced the therapeutic relationship and drug and alcohol use. In the context of these five studies, the study by Broome et al. (2007) was unique in that a shortened version of the ORC questionnaire was used. This measured all six subscales in the organisational climate domain but was limited to two out of four subscales from the staff attributes domain: growth and efficacy. This study also reported composite scores for both client engagement and the organisational climate domains but provided sub-scale scores for the staff attributes domain. Simpson et al. (2009) reported ORC in relation to treatment participation and counsellor rapport only.

Table 3. 5 Extraction Table ORC and Client Outcomes

1. Author 2. Country 3. Aim 4. Study Design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: Key findings 9. Quality Assessment 10. Further comments/ other key findings
1. Broome et al (2007). 2. United States. 3. To explore the relationship between programme structure, organisational functioning (ORC), client background and client engagement with treatment (satisfaction, rapport and participation). 4. Cross-sectional survey	5. 94 out-patient drug free treatment programs in 9 US states. 5,013 clients, 546 counselling staff, 94 programme directors or managers from out-patient addiction treatment centres for adults. 6. Treatment engagement, client background, organisational structure, organisational functioning. ORC was used to measure organisational functioning. Selected ratings scales were used in the analysis; measures of organisational climate (mission, cohesion, autonomy, communication stress and openness to change) were expressed as a composite score and two measures of staff attributes (growth and efficacy) were used. 7. i. TCU Survey of structure and operations (SSO)- Texas Christian University ii. TCU Survey of Organisational functioning (SOF), which includes ORC questionnaire (Lehman et al 2002) iii. Client evaluation of self and treatment (CEST)- (Joe et al, 2002). iv. Questionnaire on professional community work practices was devised on measures developed by (Bryk et al, 1999) on peer collaboration, deprivatised practice, reflective dialogue, focus on outcomes, collective responsibility, and counsellor socialisation. v. Multi-dimensional concept of ORC (Lehman et al, 2002)	8. Where staff reported a more positive work climate and were more confident about their attributes client engagement was more favourable. Correlations of program level covariates with engagement ratings showed that clients reported higher engagement with services where staff reported higher efficacy ($p<0.05$). Comparisons of models co-efficients demonstrated that engagement ratings were more favourable where staff reported higher ratings of **organisational climate** ($p<0.01$) and in the **staff attributes** domain; efficacy ($p<0.01$). 9. Fair 10. Non-ORC findings were that engagement was significantly more favourable in programmes which were smaller, that were accredited by one of two accreditation bodies, where staff had lower caseloads, which had a less differentiated service approach and where staff felt a greater sense of professional community. Combined analysis shows importance of the combination of variables over a single component. Analysis of client characteristics showed that females, older clients and clients who were longer in treatment had more favourable views of treatment.
1. Crits-Christoph et al (2011) 2. United States 3. i. To evaluate the extent to which patient, therapist, or programme characteristics influence the therapeutic alliance and drug and alcohol use. ii. To investigate whether alliance mediates the relationship between programme iii. characteristics and ongoing drug and alcohol use. 4. Cross-sectional survey	5. 1613 clients, drawn from a randomised clinical trial and 112 counsellors from 20 community based non-methadone prescribing outpatient SM clinics. Randomisation was staggered: patients attended group counselling over 12 week period. Data was used from two groups, measures obtained at week 1 and week 12. 6. Attendance at structured community treatment-Group counselling 7. Recent drug and alcohol use, therapeutic alliance for clients and Organisational readiness to change (needs and motivation for change, resources, staff attributes and organisational climate). i. Therapeutic alliance measure: 4-item scale (Crits-Christoph et al, 2004) ii. 2 items from Addiction Severity Index (McClellan et al 1980) iii. ORC questionnaire (Lehman et al, 2002)	8. Without therapeutic alliance in the model which was not significantly related to drug and/or alcohol use in the past week the following relationships with ORC were evident: In the **motivation/needs** domain, higher programme needs was related to greater alcohol use ($p=0.048$). In the **organisational climate** domain better perceptions of staff cohesion was related to less alcohol or drug use ($p=0.007$), less alcohol use ($p=0.024$) and less drug use ($p=0.012$) and better staff perceptions of programme communication was related to less drug use ($p=0.037$). In the **resources** domain better perceptions of programme staffing was related to less drug and alcohol use ($p=0.036$). In the **staff attributes** domain, positive staff perceptions of influence were related to: less alcohol use ($p=0.006$) or less drug use ($p=0.026$) and (combined) less alcohol or drug use ($p=0.002$). 9. Fair 10. Therapeutic alliance was not significantly related to drug and/or alcohol use during the past week. Therapeutic alliance did not significantly mediate the relationship between ORC and drug and

1. Author 2. Country 3. Aim 4. Study Design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: Key findings 9. Quality Assessment 10. Further comments/ other key findings
	iv. Multi-dimensional concept of ORC (Lehman et al, 2002)	alcohol use. Clients were able to relate better to counsellors in some programmes better than others independent of any impact from the counsellor, indicating that unknown programme variables were affecting the therapeutic alliance.
1. Greener et al (2007) 2. United States 3. To investigate the relationship between organisational functioning and client engagement in treatment: i. To measure the extent to which the 18 ORC scales and composite scores for the four sub-domains are predictive of 3 client outcomes; counsellor rapport, satisfaction with treatment and treatment participation ii. To investigate if an overall composite values based on the 4 subdomains would have a predictive value as an indicator of climate 4. Cross-sectional survey	5. 531 clinical and counselling staff and 3.475 clients in 163 substance misuse treatment programmes 6. Counselling rapport, treatment satisfaction, treatment participation and ORC composite scores index: Motivation for change/needs and pressures (NPI), Institutional resources (IRI), Staff attributes (SAI), Organisational Climate (OCI) 7. i. Organisational readiness to change staff version (ORD-S) (Lehman et al, 2002) ii. ORC-D (directors version) (Lehman et al, 2002) iii. Client Evaluation of Self and Treatment; CEST (Joe et al, 2002) iv. Multi-dimensional concept of ORC (Lehman, 2002)	8. Institutional resources and organisational climate were the most highly correlated domains. Staff perceptions of high programme needs are associated with low scores on all client engagement criteria. The overall findings confirm that counsellor rapport and treatment satisfaction were higher among clients who are treated in healthier organisational settings. Correlations of ORC domain composite scores (and significant subscales) with counsellor rapport (CR) treatment satisfaction (TS) and treatment participation (TP) were: **Motivation/needs**: CR (P<0.05), TS (0.05) with only programme needs being significant for both CR and TS. **Institutional resources**: CR (p<0.001), TS (P<0.001) with offices, staffing, equipment and internet being significant for CR and TS. **Staff attributes**: CR (P<0.05), TS (P<0.05), TP (<0.05) with influence being significant for all 3 outcome measures. **Organisational climate**: CR (p<0.01), TS (p<0.01) with mission, autonomy, communication, stress and change being significant for CR and TS and cohesion being significant for CR only. Multiple regression using ORC domains (composite scores and subscales) to predict counsellor rapport (CR) treatment satisfaction (TS) and treatment participation (TP) were: **Motivation/needs;** programme needs: CR (p<0.01), TS (p<0.001), TP (p<0.05) **Institutional resources:** offices; CR(p<0.05) TS (p<0.05) staffing: CR (p<0.001), TS (p<0.001), equipment CR (p<0.01) TS (p<0.01), internet CR (p<0.05), TS (p<0.05) **Staff attributes**; influence: CR (p<0.001) TS (p<0.001) TP (p<0.001) **Organisational climate**; mission: CR (p<0.01) TS (p<0.05) TP (p<0.05), cohesion: CR (p<0.05), autonomy: CR (p<0.01) TS (0.01), communication:

1. Author 2. Country 3. Aim 4. Study Design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: Key findings 9. Quality Assessment 10. Further comments/ other key findings
		CR($p<0.01$) TS ($p<0.01$), stress: CR ($p<0.05$) TS($p<0.01$), change: CR ($p<0.05$) TS($p<0.05$) **Staff attributes**: influence scale was significant in predicting CR ($p<0.05$). 9. Fair 10. N.A.
1. Guerrero et al (2016) 2. United States 3. To evaluate the relationship between programme capacity i.e. effective leadership, organisational readiness to change, and acceptance of Medi-Cal services (Medi-Cal is state assisted health care cover for low-income individuals in the US) with treatment waiting time and treatment duration in addiction treatment. 4. Cross-sectional survey	5. Client data was collected from 15,100 treatment episodes. Data was also collected from 147 out-patient substance misuse treatment programmes chosen randomly from 350 non-profit publicly funded substance misuse treatment programmes. Final analytic sample consisted of 97 programmes and 8,599 client treatment episodes. 6. Organisational readiness to change (needs and motivation for change, resources, staff attributes and organisational climate), leadership, Medi-cal payment acceptance and Programme capacity: wait time and treatment duration 7. i. ORC-D4 questionnaire (Lehman et al, 2002): shortened version; 68 questions of 101 were used ii. Leadership scale (Edwards et al, 2010) iii. Cultural competence self-assessment questionnaire (Mason, 1995) iv. Multi-dimensional concept of ORC (Lehman et al, 2002)	8. ORC domains were expressed as composite scores. **Motivation for change** was positively associated with treatment duration (IRR=1.0011, $P<0.05$). **Staff attributes** were negatively associated with treatment duration (IRR=0.979, $P<0.01$) 9. Fair 10. High program capacity which incorporated effective leadership, organisational readiness to change, and acceptance of Medi-Cal services was positively associated with treatment duration (IRR=1.295, $P<0.001$) and negatively associated with waiting time (IRR=0.021, $P<0.001$)
1. Guerrero et al (2014) 2. United States. 3. To examine factors associated with readiness to coordinate mental health, public health and HIV testing among community-based addiction health services programmes. 4. Cross-sectional survey.	5. Client data was collected from 15,100 treatment episodes. Data was also collected from 147 out-patient substance misuse treatment programmes chosen randomly from 350 non-profit publicly funded substance misuse treatment programmes. Final analytic sample consisted of 104 programmes and 14,379 treatment episodes. 6. Client outcomes self-reported by programme supervisors: Frequency of co-ordination with mental health providers for dual diagnosis clients, frequency of co-ordination with public health providers and frequency of co-ordination of on-site and off-site HIV testing. Percentage of public funding, state licensure, accreditation, acceptance of medi-cal (public health cover) payment, 4 measures of ORC and a measure of directors leadership. 7.	8. ORC domains were expressed as composite scores. **Motivation for change** was positively associated with programme directors scores of co-ordination with mental health services ($p<0.001$) and co-ordination with public health services ($p<0.01$). **Staff attributes** were positively associated with directors scores on clients receiving HIV testing ($p<0.05$). **Organisational climate** was positively associated with directors scores of co-ordination with mental health services ($p<0.001$) and co-ordination with public health services ($p<0.001$). 9. Fair 10. Higher director scores of co-ordination with mental health were positively associated with accredited programmes and methadone programmes. Higher director scores of co-ordination with public health facilities was associated with acceptance of medi-cal and being medi-

1. Author 2. Country 3. Aim 4. Study Design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: Key findings 9. Quality Assessment 10. Further comments/ other key findings
	i. ORC-D4 questionnaire (Lehman et al, 2002): shortened version; 67 questions of 101 were used ii. Leadership scale (Edwards et al, 2010) iii. Multi-dimensional concept of ORC (Lehman et al, 2002)	cal eligible and being referred from a drug court. Finally director scores on the frequency of HIV testing was positively associated with programmes being publicly funded, being either a methadone prescribing service or a residential service and clients being homeless.
1. Lehman (2002). 2. United States 3. i. To describe the psychometric and structural properties of an organisational readiness to change (ORC) questionnaire ii. To determine similarities in how programme directors and staff characterise their programmes iii. To examine how ORC impacts on organisational functioning. Functioning is described as how well patients are engaged with treatment. iv. To identify how programme type and organisational environment are related to components of ORC 4. Cross-sectional survey.	5. 135 programme directors and 458 staff from 111 substance misuse treatment programmes. Staff and directors completed questionnaires regarding ORC and clients completed questionnaires evaluating their treatment covering three domains of treatment; satisfaction, counsellor rapport and treatment participation. 6. Organisational readiness to change; needs and motivation for change, resources, staff attributes and organisational climate and client engagement as measured by treatment satisfaction, counsellor rapport, participation in treatment and peer support. 7. i. TCU-ORC-S (staff) and TCU-ORC-D (directors) Lehman et al, (2002) ii. Programme Identification (PID) for (Lehman et al, 2002). iii. Client Evaluation of Self and Treatment (CEST) (Joe et al, 2002) iv. Multi-dimensional concept of ORC (Lehman et al, 2002)	8. Results demonstrate that staff perceptions of ORC are predictors of client engagement in treatment. In particular, **organisational climate** (where five subscales were significant) was important. Staff having greater influence in the **staff attributes** was the only measure to reach significance across all measurements of client engagement. Office resources in **institutional resources** was the only other significant variable: In **institutional resources,** staff perceptions of staffing ($p<0.05$) were related to greater treatment satisfaction. In **staff attributes,** influence was significantly related to both higher treatment satisfaction ($p<0.01$), better counsellor rapport ($p<0.05$), treatment participation ($p<0.01$) and peer support ($p<0.05$). In **organisational climate**, higher staff ratings of autonomy ($p<0.01$) communication ($p<0.05$) openness to change ($p<0.05$) were associated with higher client treatment satisfaction. While better counsellor rapport in this domain was associated with higher staff ratings of mission ($p<0.05$) cohesion ($p<0.05$) autonomy ($p<0.01$) communication ($p<0.05$) openness to change ($p<0.01$). 9. Fair 10. Staff who worked in programmes with a more stable or increasing budget and a more predictable environment had significantly more favourable views of their organisations, in particular in the resources and climate domains. Staff and directors differed in their interpretations of training needs (directors higher) and staff attributes (directors lower), but largely agreed in their interpretations of resources and climate.
1. Simpson et al (2009). 2. United Kingdom. 3. To determine if client level of treatment engagement is related to levels of motivation and	5. 1539 clients were assessed and 439 staff from 44 treatment programmes located in northern England. Data obtained from counsellors was matched to corresponding staff to assess if personal interactions were important. 6. Client motivation and readiness for treatment, psychosocial functioning and treatment engagement. Treatment engagement was measured by;	8. This study confirmed that staff perceptions of organisational readiness to change are predictors of client responsiveness to treatment. Findings matched counsellors with their corresponding clients and this showed that the relationships found had a basis in the client/counsellor relationship.

1. Author 2. Country 3. Aim 4. Study Design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: Key findings 9. Quality Assessment 10. Further comments/ other key findings
psychosocial functioning as well as staff perceptions of professional attributes and programme atmosphere. 4. Cross-sectional survey	treatment satisfaction, counsellor rapport, treatment participation and peer support. Organisational readiness to change; 4 domains are: needs and motivation for change, resources, staff attributes and organisational climate. 7. i. Client Evaluation of Self and Treatment (CEST) (Joe et al, 2002) ii. ORC questionnaire (Lehman et al, 2002) iii. Multi-dimensional concept of ORC (Lehman, 2002)	In **institutional resources,** higher staff ratings of training ($p<0.05$) was related to better treatment participation. In **staff attributes,** better treatment participation was significantly related to more favourable staff perceptions of growth ($p<0.001$), efficacy ($p<0.01$) and adaptability ($p<0.01$) while counsellor rapport was related to growth ($p<0.05$). In **organisational climate** only, staff perceptions of mission ($p<0.05$) and lower scores on stress ($p<0.05$) were significantly related to better treatment participation while mission ($p<0.05$) was related to better counsellor rapport. Data was cross compared with data from a similar US study (Greener et al, 2007) and it was found that data from the UK study was not consistent with US findings. This was attributed to the type of programmes included in this analysis and a decision was taken to re-assess results with inappropriate programmes excluded. A second analysis was completed which involved 22 programmes, which included 142 counsellors and 858 clients. This analysis was more consistent with results found in the US: In **institutional resources,** more favourable staff views of offices ($p<0.05$) and equipment ($p<0.05$) were related to better treatment participation while ratings of training ($p<0.01$) and equipment ($p<0.01$) was significantly related to better counsellor rapport. In **organisational climate,** staff perceptions of cohesion ($p<0.5$) was related to better treatment participation while more favourable perceptions of cohesion ($p<0.01$) communication ($p<0.05$) openness to change ($p<0.05$) were related to better counsellor rapport. In the refined analysis the **organisational climate** and **institutional resources** domains were the most significant in terms of predicting treatment participation and counsellor rapport. 9. Fair 10. The UK sample was compared to a larger US sample and while both the UK and US samples showed staff attitudes to be predictors of client engagement, the predictor profiles differed. This may have been due to differences in sample size and programme profiles. Client characteristics were an important predictor of engagement; ratings on treatment motivation and psychological and social wellbeing were predictors of a good therapeutic relationship and participation in treatment.

Greener et al. (2007) reported on the relationship between ORC and counsellor rapport, treatment satisfaction and treatment participation while Lehman et al. (2002) reported on all four subscale measures including peer support. The study by Lehman et al. (2002) was principally a validation study that also measured how ORC related to client engagement. The remaining three studies that used the CEST tool (Joe et al., 2002) focused on the relationship between ORC and client engagement measures, which is reflective of the scope of this review. Finally, three studies examined the relationship between ORC and service capacity issues which were reported as having direct benefits for clients (Guerrero et al., 2015, Guerrero et al., 2014a, Guerrero et al., 2014b). These benefits included the accessibility of satellite services such as mental or public health services and/or HIV testing services, capacity to engage publicly funded clients, reduced waiting times and increased retention in treatment. One study used composite scores and a shortened version of the ORC tool and identified that organisational climate was a predictor of treatment engagement and also found that in programmes where staff reported higher efficacy, clients also reported better treatment engagement (Broome et al., 2007). To avoid confusion, outcomes are discussed separately, but if they relate to the same paper, they may be discussed together. As all of the included papers utilised an ORC tool developed by Lehman and colleagues, Table 3. 6 provides an overview of how the ORC domains and subscales relate to the outcomes measured. This table arguably provides the most succinct overview of how the variables measured by the ORC tool can relate to treatment delivery. The relationships between subscales and outcomes are described as either being either statistically positive (+) or negative (-) or not significant (NS). An example of a statistically negative relationship is where in the motivation for change domain, higher staff ratings of programme needs were related to both lower client ratings of counsellor rapport and treatment satisfaction. Composite scores for domains were used in one of the included

papers, and these are also described in this table. For ease of comprehension, some results have been excluded and anomalies have been highlighted. Where this has occurred, this has been appropriately identified at the bottom of the table in accordance with each paper listed (i) to (viii).

Table 3. 6 Overview of ORC Relationships

Domain	**Subscales**	**Relationship with ORC subscales: (+) = statistically positive relationship, (-) = statistically negative relationship, n = number of studies citing relationship, NS = no statistically significant relationship**
Motivation for change (MFC)	e) Program needs: f) Training needs: g) Pressures for change: h) Composite:	a) (+) alcohol use (n=1: ii), (-) counsellor rapport (n=1:iii), (-) treatment satisfaction (n=1:iii),(-) treatment participation (n=1,iii) b) NS c) (+) organisational certainty (n=1:vii) d) (-) counsellor rapport (n=1,iii), (-) treatment satisfaction (n=1:iii), (+) Treatment duration (n=1:v), (+) programme directors scores of co-ordination with mental health services (n=1:vi)
Institutional Resources (IR)	g) Offices: h) Staffing: i) Training: j) Equipment: k) Internet: l) Composite:	a) (+) counsellor rapport (n=1:iii), (+) treatment satisfaction (n=1:iii), (+) organisational stability (n=1:vii), (+) treatment participation (n=1:viii) b) (+) counsellor rapport (n=1:iii), (+) treatment satisfaction (n=2:iii,vii), (+) financial stability (n=1:vii), (+) organisational stability (n=1:vii) c) (+) organisational stability (n=1:vii), (+) counsellor rapport (n=1:viii) d) (+) counsellor rapport (n=2:iii,viii), (+) treatment satisfaction (n=1:iii), (+) organisational stability (n=1:vii), (+) organisational certainty (n=1:vii),(+) treatment participation (n=1:viii) e) (+) counsellor rapport (n=1:iii), (+) treatment satisfaction (n=1:iii) f) (+) counsellor rapport (n=2:iii,viii), treatment satisfaction (n=1:iii), (+) treatment participation (n=1:viii)
Staff Attributes (SA)	f) Growth: g) Efficacy: h) Influence: i) Adaptability: j) Composite:	a) (+) organisational stability (n=1:vii) b) (+) Treatment engagement (n=1:i) c) (-) alcohol use (n=1:ii), (-) drug use (n=1:ii), (-) drug and alcohol use (n=1:ii), (+) counsellor rapport (n=2:iii,vii), (+) treatment satisfaction (n=2:iii,vii), (+) treatment participation (n=2:iii,vii), (+) peer support (n=1:vii), d) NS e) (+) counsellor rapport (n=1:iii), (+) treatment satisfaction (n=1:iii), (+) programme directors scores of clients receiving HIV testing (n=1:vi) (-) shorter treatment duration (n=1:v)
Organisational Climate (OC)	h) Mission: i) Cohesion: j) Autonomy: k) Communication: l) Stress: m) Openness to Change: n) Composite:	a) (+) counsellor rapport (n=2:iii,vii), (+) treatment satisfaction (n=1:iii), treatment participation (n=1:iii) (+) organisational certainty (n=1:vii) b) (-) drug or alcohol use (n=1:ii) (-) alcohol use (n=1:ii) drug use (n=1:ii) (+) counsellor rapport (n=3:iii,vii,viii), (+) treatment participation (n=1:viii), c) (+) counsellor rapport (n=2:iii,vii), (+) treatment satisfaction (n=2:iii,vii) d) (-) drug use (n=1:ii) (+) counsellor rapport (n=3:iii,vii,viii), (+) treatment satisfaction (n=2:iii,vii), (+) financial stability (n=1:vii), (+) organisational stability (n=1:vii) e) (-) counsellor rapport (n=1:iii), (-) treatment satisfaction (n=1:iii), (-) organisational stability (n=1:vii), (-) organisational certainty (n=1:vii) f) (+) counsellor rapport (n=3:iii,vii,viii), (+) treatment satisfaction (n=2:iii,vii), (+) financial stability (n=1:vii), (+) organisational stability (n=1:vii) g) (+) Treatment participation (n=1:viii), (+) counsellor rapport (n=2:iii,viii) treatment satisfaction (n=1:iii), (+) Treatment engagement (n=1:i), (+) programme directors scores of better co-ordination with mental health services (n=1:iv), programme directors scores of better co-ordination with public health services (n=1:iv)
ORC as a composite score	----------	(+) higher retention in treatment (n=1:iv) (-) waiting time for treatment (n=1:iv)

i. Broome et al. (2007): Ratings of treatment satisfaction, counsellor rapport and treatment participation were expressed as a composite score; described as treatment engagement. Ratings of OC were expressed as composite score.
ii. Crits-Christoph et al. (2011): Results provided are without therapeutic alliance in model.
iii. Greener et al. (2007): For bivariate analysis, only composite scores for domains are reported in this table and all multiple regression scores are reported.
iv. Guerrero et al. (2015): ORC was expressed as a composite score in this paper and a shortened version of ORC tool was used.
v. Guerrero et al. (2014a): ORC domains were expressed as composite scores and a shortened version of ORC tool was used. This study focused on ethnic minorities and the authors concluded that better reported staff skills may not necessarily reflect their ability to help retain ethnic minorities in treatment.
vi. Guerrero et al. (2014b): Shortened version of ORC tool was used in this paper.
vii. Lehman et al. (2002)
viii. Simpson et al. (2009): Two analysis were completed in this paper. Second analysis only is included in this table. Composite scores for domains are also included.

3.2.3.2 Synthesis of Results

Therapeutic relationship and drug and alcohol use

In the three studies that reported using ORC subscales (not composite ORC scores) in conjunction with the CEST engagement measures, on average eight of the eighteen ORC subscales were related to counsellor rapport, with the organisational climate domain being the strongest predictor of a good rapport. An average of five of the six subscales in organisational climate were predictive of better counsellor rapport, with only stress having a negative relationship (Simpson et al., 2009, Greener et al., 2007, Lehman et al., 2002). Counsellors who work in programmes with greater mission clarity, better cohesion, communication, more staff autonomy, less stress and more openness to change, also create an environment where staff have a better therapeutic rapport with their clients. Institutional resources was the second most significant domain in predicting counsellor rapport with Simpson et al. (2009) finding that office facilities and equipment were important, while Greener et al. (2007) found that four subscales out of five were significant, with training being the exception. Clients are more likely to have a good therapeutic rapport with their counsellors in programmes where staff perceive there to be better office equipment, staffing levels, good computer equipment and access to e-communication. Two US studies found that clients who accessed programmes where staff saw themselves as having more influence with peers reported better rapport with their counsellors (Greener et al., 2007, Lehman et al., 2002) while in the UK sample, Simpson et al. (2009) did not find any relationship between staff attributes and counsellor rapport.

High programme needs were also associated with poor counsellor rapport in one study only (Greener et al., 2007). A key finding in a study by Crits-Christoph et al. (2011) was that variability in the therapeutic alliance at the programme and client level had a greater impact on drug and

alcohol use than did the alliance at the counsellor level. This means that programme characteristics as measured by ORC, determined drug or alcohol use amongst clients more than the therapeutic alliance, and that variability in the alliance was related more strongly to programme variables than to individual counsellors. Unsurprisingly, Crits-Christoph et al. (2011) concludes that counsellors with high stress levels, who work in poorly functioning programmes with difficult to treat clients, have a poorer alliance and outcomes than counsellors working at more effectively functioning programmes.

Programmes where staff perceived there to be higher programme needs and poor staffing levels had higher levels of drug and alcohol use amongst their clients (Crits-Christoph et al., 2011). Clients who accessed programmes in which teams were viewed as having better cohesion and where staff viewed themselves as having more influence amongst their peers used less drugs and alcohol (Crits-Christoph et al., 2011). By including measures of drug and alcohol use, this study enhances findings in other papers discussed here and builds further on the predictive utility of ORC measurements found in other studies (Simpson et al., 2009, Broome et al., 2007, Greener et al., 2007, Lehman et al., 2002). Programmes with a more favourable climate, better resources and fewer needs, where staff see themselves as having more favourable attributes, create environments where staff are more likely to be successful in forming effective relationships with clients.

Treatment Satisfaction

The organisational climate domain was a significant predictor of treatment satisfaction although this was only reported in two studies (Greener et al., 2007, Lehman et al., 2002). Clients reported higher satisfaction with programmes where staff reported greater autonomy, better

communication, more openness to change and lower levels of stress amongst staff. Institutional resources were also important as clients also expressed higher satisfaction with programmes where staff reported higher staffing levels, better equipment, office facilities and internet access. Remarkably, in both of these studies, staff influence was again important in that it predicted higher ratings of programme satisfaction. Greener et al. (2007) identified a relationship between higher programme needs and poorer satisfaction in the motivation for change domain. Clients are more likely to be satisfied with the treatment they receive in programmes with a more favourable working climate, better resources and lower organisational needs, and where staff see themselves as having more influence with peers.

Treatment Participation

In three studies, treatment participation was related to no more than three of the eighteen ORC subscales. Organisational climate was again found to be important, as clients who accessed programmes reporting higher staff cohesion, better mission clarity reported higher levels of participation in their recovery programmes (Simpson et al., 2009, Greener et al., 2007, Lehman et al., 2002). Consistent with findings on counsellor rapport, influence in the staff attributes domain was also an important factor in determining how well clients participated in treatment (Greener et al., 2007, Lehman et al., 2002). Simpson et al. (2009) found improved participation where staff reported better opportunities for growth, higher personal efficacy and better adaptability. Simpson et al. (2009) was the only paper which found that clients participated more effectively in programmes where institutional resources such as offices and equipment were better and perhaps this is more reflective of the UK context. Participation in treatment is poorer where programme needs were identified as being greater (Greener et al., 2007). In programmes where staff perceive

themselves to have more positive working climates, better personal skills and lower programme needs, clients are more likely to be more committed to their treatment.

Peer support

Peer support, which examines the extent to which individuals have accessed support from other programme users, was the least reported on sub-scale where the CEST tool was used. One paper reported on the relationship between ORC and peer support, and identified in the staff attributes domain, that staff having greater influence was important in determining if clients had greater peer support (Lehman et al., 2002). It is not clear to what extent programme characteristics can influence the level of peer support clients utilise, or how client characteristics may influence on this.

Waiting Time and Retention

Two US studies examined the relationship between programme capacity, treatment waiting time and treatment retention (Guerrero et al., 2015, Guerrero et al., 2014a). Programme capacity incorporated three measures: leadership capacity, ORC and a programmes agreement to accept government subsidised payments from lower income groups. A shortened version of the ORC tool (67 items instead of 118) was used for these studies and composite scores for ORC domains only were provided by Guerrero et al. (2014a) while the second paper expressed ORC as a total composite score (Guerrero et al., 2015). When ORC was expressed as a composite score it was positively associated with both lower wait time and better treatment retention (Guerrero et al., 2015). In a separate study, the motivation for change domain (programme needs) were positively associated with treatment retention and where staff reported better attributes, this was negatively

associated with treatment retention (Guerrero et al., 2014a). Unexpectedly, Guerrero et al. (2014a) found that staff attributes were negatively associated with treatment duration, however this study focused on in-treatment ethnic minorities only and the author argues the ORC tool was not designed to measure cultural competency. In all of these studies, programme measurements were provided by one manager per programme only. The negative relationship between staff perceiving themselves to have more favourable attributes and shorter treatment is anomalous and was partially attributed to possible deficits in staff skills in terms of engaging the high levels of ethnic minorities which attended the programmes examined.

Co-ordination with other services

One paper reported ORC domains as a composite score and found that the ORC domains of motivational readiness for change and organisational climate were positively associated with co-ordination with mental health and public health services while the institutional resources domain was positively associated percentage of clients receiving HIV testing (Guerrero et al., 2014b). This study also found that programmes with more favourable ORC reduce waiting times through more effective co-ordination with mental health and HIV testing services.

Other findings

Smaller programmes, having a less differentiated service approach and having standard accreditation were important factors determining better engagement (Broome et al., 2007, Lehman et al., 2002). Positive ratings where the service approach was not as variable is not expected and was attributed to the characteristics of clients accessing these particular programmes (Broome et al., 2007). Staff having a smaller caseload and feeling a greater sense of professional community

were also strongly related to client engagement (Broome et al., 2007). Clients who access smaller services where their keyworkers have a greater sense of professional community are also more likely to receive more effective care (Broome et al., 2007). Programmes reporting more stability and budgetary certainty were also more likely to have favourable organisational readiness to change and function more effectively (Lehman et al., 2002). In countries where healthcare is not free at the point of entry, willingness to accept state sponsored payment is critical in terms of engaging clients from hard-to-reach populations (Guerrero et al., 2015, Guerrero et al., 2014a). Programme type, capacity and referral source of clients can also have an influence on a services ability to reduce waiting lists, retain clients in treatment and work effectively with supporting services and many of these findings are worthy of further attention (Guerrero et al., 2015, Guerrero et al., 2014a, Guerrero et al., 2014b). Client characteristics are important, and being older, female, spending longer time in treatment was also predictive of better engagement (Broome et al., 2007). Assessments of clients treatment motivation, psychological and social wellbeing revealed that more motivated clients with better mental health, and greater levels of social functioning participate more in treatment and achieve more effective therapeutic relationships (Simpson et al., 2009). These findings should provide policy makers and planners with important points for consideration.

3.2.4 Discussion

This paper has incorporated the previous fifteen years of scientific research in relation to organisational readiness to change and its relationship with client outcomes in the substance misuse field. The ORC tool, or a modified version of this tool developed by Lehman and colleagues (2002) was used in all of these studies. This is not the only tool that has been used to measure

ORC, Gagnon et al. (2014) identify in a systematic review that it has reliable properties when it is used to measure the process of knowledge transfer, but its ability to relate to client outcome measures when compared to other ORC measurement tools is not as well established. Following its initial design, this tool was described by Lehman and colleagues (2002,p208) as 'a work in progress' but it has received little modification since. Theoretically, there is still some ambiguity regarding ORC (Stevens, 2013) and typically ORC is conceptualised in respect of a specific change (Weiner, 2009, Armenakis and Bedeian, 1999). The ORC tool developed by Lehman and colleagues was initially conceptualised to measure an organisation's ability to adopt new innovations. However, it is promising that in the studies included in this paper, ORC was utilised successfully in conjunction with other measures to effectively assess organisational functioning. Overall, this paper supports findings identified in other studies, that attributes related to organisational effectiveness should be carefully considered by planners and policy makers, as they have a direct effect on client outcomes, and other important areas of treatment delivery (Kelly et al., 2017, Ghose, 2008, Gossop et al., 2003).

The organisational climate domain was clearly the most important in terms of predicting engagement with treatment. This finding is supported by a previous systematic review on the relationship between ORC and innovation adoption (Kelly et al., 2017). This finding is consistent with studies in the for-profit sector which have demonstrated that a good organisational climate, which also increases employee involvement significantly, contributes to organisational effectiveness (Riordan et al., 2005). The institutional resources domain was the second most significant domain in terms of predicting client engagement. In one study however, while

institutional resources were found to be correlated with client engagement, it was not found to be predictive of this in a final statistical analysis (Greener et al., 2007).

It is important to highlight that studies using the ORC tool have established that there is a relationship between organisational climate and resources. Greener et al. (2007) showed that more favourable staff perceptions of institutional resources was directly related to their interpretations of organisational climate which also predicted better client engagement. The relationship between staff perceptions of resources, needs and organisational climate was also demonstrated in a study by Joe et al. (2007) which was outside the scope of this review. This suggests that more highly resourced programmes are more likely to a have a more favourable organisational climate, which in turn means that clients are engaged more effectively. It is possible that in practice that some aspects of organisational climate, such as improved communication and mission clarity might be improved without additional resources (Kelly, 2000). There is minimal evidence available on how this might be achieved in practice, and the relationship between climate and resources is worthy of further investigation.

Within substance misuse programmes, where resources are often limited, the development of cost-effective interventions to improve organisational performance is warranted. An example of this is 'The Change Book' developed in the US as a free self-help manual for organisations who wish to embark on organisational change (Addiction Technology Transfer Centers, 2004). Arguably, organisations with less resources and a poorer climate, may be less favourably positioned to engage with efforts to improve organisational effectiveness. There is no evidence available to support the utility of low-cost interventions in improving organisational climate, or other areas of

organisational functioning. In studies outside the scope of this review, where staff have identified high programme needs they are more likely to wish to engage in quality improvement initiatives (Courtney et al., 2007).

Staff perceptions of their own attributes also predicted client engagement in all four studies. In particular, staff feeling that they had greater influence with peers was a predictor of client engagement in two of the studies (Greener et al., 2007, Lehman et al., 2002). In healthcare settings, more influential staff may possess inter-personal skills which make them more effective at engaging clients, but certainly have attributes which enable them to more effectively contribute to and sustain organisational improvements (Flodgren et al., 2011, Borbas et al., 2000). Substance misuse treatment programmes where staff see themselves as having more influence amongst peers are more effective at implementing new innovations in practice (Lundgren et al., 2012, Lundgren et al., 2011a, Fuller et al., 2007). A systematic review by Kelly et al. (2017) on ORC and innovation adoption, identified several papers where a relationship between staff influence and innovation adoption was established. In this review, these findings were not reflected in the UK study but the findings on the importance of staff influence is worthy of further investigation.

High scores in the motivation for change domain signify that staff have identified greater programme needs and thus while this may signify a greater desire for staff to change (Courtney et al., 2007, Joe et al., 2007), other studies have shown that it is also likely to indicate unfavourable organisational performance (Lundgren et al., 2012). This finding is consistent with a study included in this review where it was found that there were greater perceived programme needs, treatment engagement was less favourable (Greener et al., 2007). In this respect, papers included

in this review contained some results which deserve further attention. Positive relationships between the motivation for change domain (programme needs) and outcomes for clients were identified in two papers (Guerrero et al., 2014a, Guerrero et al., 2014b). This indicates that where organisations were perceived as having more deficits by staff they performed more effectively, which conflicts with findings from other papers. It is notable that in these two papers, the ORC questionnaire was reduced from 118 to 67 items and as the domains were reported as a composite score, it is not possible to ascertain which subscales were excluded. Utilising composite measures is convenient, but including subscale scores provides richer data, allows researchers policy makers and planners to understand important organisational attributes, and facilitates cross comparison of results.

Comparisons between US and UK measures of ORC and client engagement demonstrated similar but not the same results and this makes a case for more cross-country comparisons to support consistency in the findings (Simpson et al., 2009). The different results not only between countries, but also between services in the same country, illustrate that the utility of the ORC tool may be influenced by the type of treatment services that it is used in and further clarity is required in this respect. In terms of ORC findings, where staff identify higher programme needs, client engagement is likely to be lower. More effectively resourced programmes are more likely to have a favourable organisational climate, which in turn is a decisive factor in determining client engagement. Organisations where more staff believe that they have better skills, greater influence with their peers and have a sense of belonging to a professional community are also more likely to deliver better outcomes for clients.

3.2.5 Limitations

Although, rigour was attempted during this review, it is important to highlight potential limitations. All papers identified in this study which related to ORC and substance misuse treatment, were subject to full text review. However, this review was limited to specific types of substance misuse programmes. Although the authors were vigilant throughout the process, it is possible that important papers were missed or excluded. Including research from other areas may have helped to broaden the understanding of this concept in relation to client or customer engagement and might have provided further validation of the findings. Modified versions of the ORC tool developed by Lehman and colleagues (2002) have been validated for a range of settings, including correctional facilities and youth programmes (Lehman et al., 2012b, Saldana et al., 2007). The variables measured by ORC are dynamic, subject to change, and would be measured most effectively over time as the external and internal determinants evolve (Rafferty et al., 2013, Stevens, 2013). The eight studies included in this review were cross-sectional, which did not allow for the analysis of ORC longitudinally. All treatment related benefit or outcomes that related to ORC were included in the scope of this review. Many of the outcomes measured, such as treatment satisfaction and retention, may be considered to be proxy measures of treatment success. Outcomes such as inter-agency co-operation were self-reported by staff, and the benefits for clients remain unclear. A more specific focus on outcomes may have provided less ambiguous findings but may also have excluded potentially important results. Findings from studies conducted outside of the US are broadly consistent with those conducted in the US (Bowles et al., 2011, Rampazzo et al., 2006). There were still contrasting results, not just from country to country, but differences were also reported between programmes. In this respect, more research is required to determine how effectively ORC can be generalised to other contexts. Analysis of this is restricted where papers

included in this review, provided composite scores for each domain of ORC. While the findings in this review support the utility of the ORC concept and its measurement, it should be acknowledged that there are variables which are not within the scope of this review which can determine the success of treatment (Darker et al., 2015, Gossop et al., 2003). It is not yet clear how closely these relate to variables which are incorporated into ORC measurements.

3.2.6 Conclusion

Overall, too little is known about the relationship between treatment service variables and client outcomes. Staff perceptions of treatment services are important and can contribute valuable information on how capable a service is of providing effective treatment. Programme functioning as measured by ORC provides a measurement of several areas of organisational functioning which can be predictive of important client outcomes. Clients who access services with a good organisational climate are more likely to be satisfied with treatment, will have better relationships with staff, and will engage in substance misuse less frequently. An effectively resourced and financially stable programme with lower needs is more likely to have a positive organisational climate. The relationship between specific types of resources and organisational climate is not yet clear. Clients will also engage more effectively with staff who have particular attributes, but more knowledge is required on how to effectively identify and develop these staff attributes in practice.

An understanding of which aspects of treatment services are the most important is enhanced when ORC is measured in conjunction with other variables such as caseload size, clinical governance, financial stability, and service user complexity. In practice, little is known about how to address organisational deficits once they are identified using the ORC tool, and further analysis of this is

required. There is currently no accepted standard or understanding of the configuration of effective substance misuse treatment services. Obtaining further evidence on how organisational variables identified in this review can determine treatment effectiveness would provide valuable data for policy makers and planners. ORC measurements provide a good basis on which this can be developed. Despite some conceptual discussion around ORC, it is widely accepted that ORC is a dynamic concept and more longitudinal assessment of how changes in treatment services impact directly on client outcomes. This would provide an indication of the impact of new practice, policies, and variabilities in resource allocation over time. There is also a requirement for in-depth qualitative exploration of how ORC and other variables inclusive of client perspectives, might influence effective treatment. Utilisation of ORC measurements can provide a basis for an expansion of knowledge on *how* and *why* treatment works. Overall, policy makers and planners ought to consider how changes for which they are responsible, will impact on organisational functioning prior to the implementation of change.

3.2.7 Summary

These reviews examining the relationship between ORC and (i) innovation adoption (ii) client engagement provide future directions for research of substance misuse treatment services. Staff perceptions of ORC are important and their measurement in conjunction with other variables can provide important insights for planners and service managers. Services with more favourable ORC ratings are more likely to adopt to change, and to more effectively engage service users in treatment. In substance misuse services overall, there has been a dearth of prospective or interventional studies using the ORC tool and a lack qualitative analysis using the ORC framework. The resources for prospective interventional studies may not always be available, but

in this case qualitiative investigations would facilitate some retrospective analysis of how well organisations have supported change, and what aspects of organisational functioning may have facilitated this. There is also an overall absence of information on what policy makers and planners can do once ORC deficits have been identified. Qualitative studies could provide an appropriate medium through which this problem can be addressed. ORC has never been measured in the context of Irish substance misuse treatment services. These reviews have provided ample justification for further investigations of ORC in Irish and international contexts, using both quantiative and qualitative methods.

Chapter 4: Methodology for a mixed methods study of the relationship between organisational readiness to change, innovation adoption and service user engagement in community-based opiate substitution treatment services in Ireland[11]

4.1 Introduction

Rates of drug related deaths in Ireland and the UK are amongst the highest in Europe and there have been significant increases in drug related mortality in the last decades (Office for National Statistics, 2016, Lynn and Lyons, 2016). Some of this has been attributed to changing patterns in drug use (Public Health England, 2016). It has also been observed in the UK context, that the impact of over a decade of treatment service re-configuration has largely had a detrimental impact on service delivery (Drummond, 2017, McGrail, 2014b). Despite this, there is minimal scientific evidence available in substance misuse treatment, which indicate how service delivery factors relates to service user outcomes. We do know that some treatment services are more effective than others, but little is known about *how* or *why* this is the case (Gossop, 2006a). It is of paramount importance to understand which aspects of organisational structures and processes are better than others (Simpson et al., 2009). The acquisition of this knowledge is essential if we wish to prioritise specific and effective efforts to improve services or envisage how changes to service configuration might affect the delivery of care.

ORC, described as whether workers are collectively *willing* or *able* to support organisational change, is a key concept in the field of organisational development. ORC has been shown to relate to how effectively substance misuse treatment services can adopt new treatment approaches, and

[11] This is an overview of the PhD methods. Methods pertinent to each research paper will be outlined separately in chapters 5, 6 and 7.

effectively engage and retain service users in treatment (Kelly et al., 2018, Kelly et al., 2017). While these relationships are clear, most studies have not examined ORC as a dynamic process. Little is known about how to address ORC deficits once they are identified in practice. There is an overall dearth of qualitative information on ORC, and no studies have ever been conducted on ORC in the context of Irish substance misuse treatment services.

4.2 Aims

The overall aim of this study was to describe and explore the relationship between staff perceptions of ORC in community-based OST services in Ireland, and its relationship with: (i) service user engagement with treatment (ii) staff perceptions of the process of innovation adoption (Figure 4. 1).

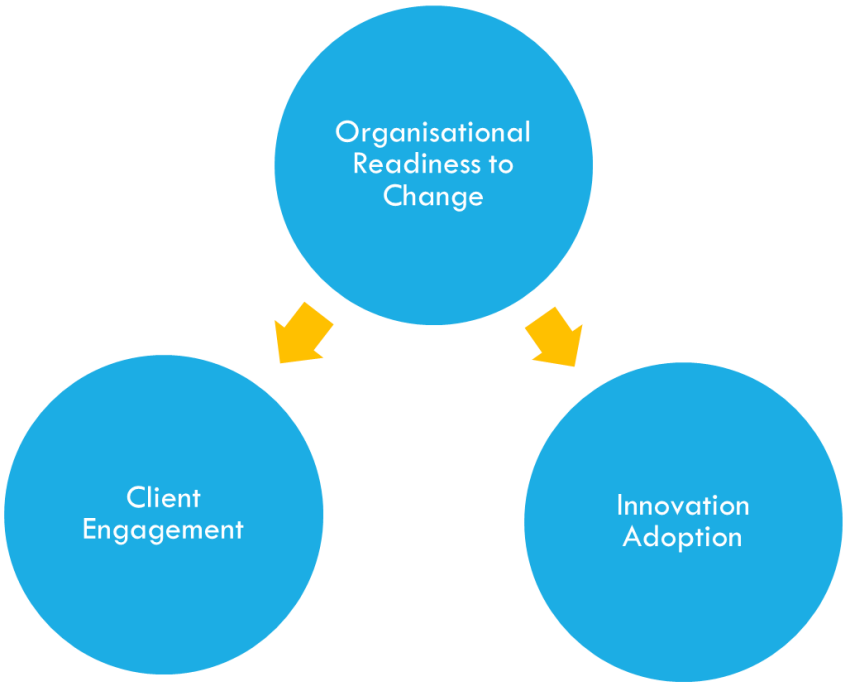


Figure 4. 1 Key study constructs presented in diagrammatic format

4.3 Theoretical Underpinnings

The process of innovation adoption, ORC and service user engagement with treatment are the three core constructs in this study. Theories of ORC and innovation adoption are conceptually related while service user engagement is a distinct construct. Within Figure 4. 2, a diagrammatic overview of the study concepts are provided; highlighting the over-arching constructs, included domains, and methods of investigation. The three over-arching constructs in this study are; ORC, innovation adoption and service user engagement.

Theoretically, ORC is the foundation on which successful change is based. It could be described as the *reason* why organisational change is successful or not. Weiner and colleagues (2009) seminal theory of ORC views ORC as a multi-dimensional and dynamic psychological construct. It is proposed that increased ORC results in greater organisational success in adapting to change. In this theory, c*hange commitment* (wanting) and *change efficacy* (being able) are not considered to be conceptually distinct, and are seen as a central components of ORC. Drawing on motivational theory, Weiner also theorises that *change valence* or the degree to which organisational members value a specific change, is a key determinant of ORC and accepts that the level of commitment is change specific. The two central components of ORC are also considered to be determined by *contextual factors* such as organisational culture and resources, past experiences with change or organisational policies (Weiner, 2009). In the context of this theory, it is important to note that ORC has also been operationalised as an overall measure of *the state* of organisational functioning, and without reference to a specific change (Simpson et al., 2009, Lehman et al., 2002).

A review of theoretical interpretations on innovation adoption concluded that overall, adoption is a process where staff become aware of an innovation and utilise information with which to make a decision to adopt to change or not (Wisdom et al., 2014). Established adoption (or change) occurs when organisations commit to an innovation. As previously discussed, Lewin's 3-stage theory has been described as the seminal 'yardstick' upon which all later theories and conceptualisations of organisational change are based (Burnes and Cooke, 2012). The 4-stage concept model of innovation adoption conceptualised by Simpson (2002) and utilised in this study, has a strong basis in Kurt Lewin's (1958) 3-stage theory of change. Kurt Lewins theory describes a *process* of organisational change which is influenced by *driving* and *restraining* forces. When these two forces are in *equilibrium* then no change occurs [Figure 2. 3] The driving and restraining forces for organisational change are effectively captured within theoretical constructs of ORC.

Within this organisational change theory, Lewin's (1958) process model *unfreezing,* might be accomplished by providing information to develop discrepancy between the status quo and the desired change. Arguably, this *unfreezing* stage most closely relates to training exposure and training satisfaction domains and the construct of innovation adoption outlined in Figure 4. 2. *Moving,* alters the organisational behaviour, and develops new behaviours and values through a process. Finally, *re-freezing* is where the desired behaviour stabilises and becomes a new organisational norm. Within the construct of innovation adoption, the moving and re-freezing stages of Lewin's change theory most strongly relate to individual and organisational utilization and adoption of an innovation.

An over-arching theory of service user engagement is still required, and conceptual interpretations of service user engagement remain subject to deliberation (Barello et al., 2012). It has been described as an interdependent or co-constructed phenomena involving the service user and the organisation (Dixon et al., 2016). It is also accepted that the therapuetic relationship is, conceptually at least, a central component of service user engagement. A theoretical paper by McGuire et al. (2001) identify six interpretations of the therapeutic relationship, which include role theory, psychoanalysis, social constructionism, systems theory, social psychology and cognitive behaviourism. It is not yet clear how these interpretations are operationalised. Overall, positive service user engagement incorporates a good therapeutic alliance, characterised by person centred care and positive attitudes from the healthcare worker. In addition to this, 'internal state' service user factors which can be observed through increased commitment, extra enthusiasm, and more effort to achieve treatment goals are also important components (Dixon et al., 2016, Bright et al., 2015). In this study, many of these 'internal state' factors will be self-reported by service users using the structured questionnaire.

4.4 Conceptual and operational definitions

ORC: conceptual definition

Attieh and colleagues (2013) conducted a conceptual review and identified that ORC was composed of five core concepts, with seventeen related dimensions and fifty-nine sub-dimensions. The five core concepts identified were; organisational dynamics, change process, innovation readiness, institutional readiness, and personal readiness. Overall, ORC incorporates shared cognitive and affective appraisals of individuals, a team or an organisations commitment and ability (Weiner, 2009). ORC typically relates to a specific change and is multi-dimensional, and

complex. When readiness to change is high, organisational members are more likely to show initiative, work harder and co-operate, which in turn results in more effective implementation and continuation of change (Holt and Vardaman, 2013, Weiner et al., 2008).

Organisational readiness to change: operational definition

ORC is a shared psychological state which consists of measurements of staff perceptions of four organisational domains. These are defined as: motivation for change (programme needs), institutional resources, staff attributes and organisational climate (Lehman et al., 2002). This does not include aspects of ORC which from a theoretical perspective, incorporate a specific change.

Innovation adoption: conceptual definition

It is standard practice for researchers to conceptualise the integration of innovations into practice as a process which occurs in stages (Garner, 2009). In the field of substance misuse, the programme change model developed by Simpson (2002) describes the process of innovation adoption, and has been successfully applied in research and in practice. This conceptual model envisages a process of innovation adoption that occurs in four stages: (i) *training* (exposure to new innovations), (ii) *adoption* of the new practice (representing a decision taken to adopt and/or to take action to do so), (iii) *implementation* (sustained support for the change effort), and finally (iv) *practice* where the change becomes standard practice. Although the four stages are conceptually distinct, the process in practice is characterised by their interdependence.

Innovation adoption: operational definition

Innovation adoption consists of measurements of staff perceptions in four domains (Simpson, 2002). These are defined as: training exposure, training satisfaction (related to adoption), individual training utilisation (adoption, implementation, practice) and organisational training utilization (adoption, implementation, practice).

Service user Engagement: conceptual definition

Across a range of healthcare settings, the ability of an organisation to engage service users has been identified as imperative for ensuring positive health outcomes (Barello et al., 2012). Service user engagement can incorporate a co-constructed process between the healthcare organisation, its workers, and the service user. This process is thought to be influenced by the internal service user state (Bright et al., 2015). The internal service user state is thought to be measurable through assessing service user behaviours, such as increased participation in treatment (Dixon et al., 2016). In this context, engagement can also be interpreted as a therapeutic dyad, as opposed to something which is solely influenced by the service users internal state and this is thought to reflect reality more accurately. From a healthcare perspective, this interpretation is thought to be more useful in terms of supporting engagement (Dixon et al., 2016). If engagement falters, this should act as a prompt to the organisation and health care practitioner to reflect on their own approach, and not just to attribute failures solely to the service user.

Service user engagement: operational definition

Service user engagement is operationalised by measuring service user perceptions of treatment in four domains (Joe et al., 2002). These are defined as: treatment satisfaction, counselor rapport,

treatment participation and (service user perceptions of) peer support. Within these four areas, service users are asked to report on the degree to which being in treatment continues to influence some of their behaviours.

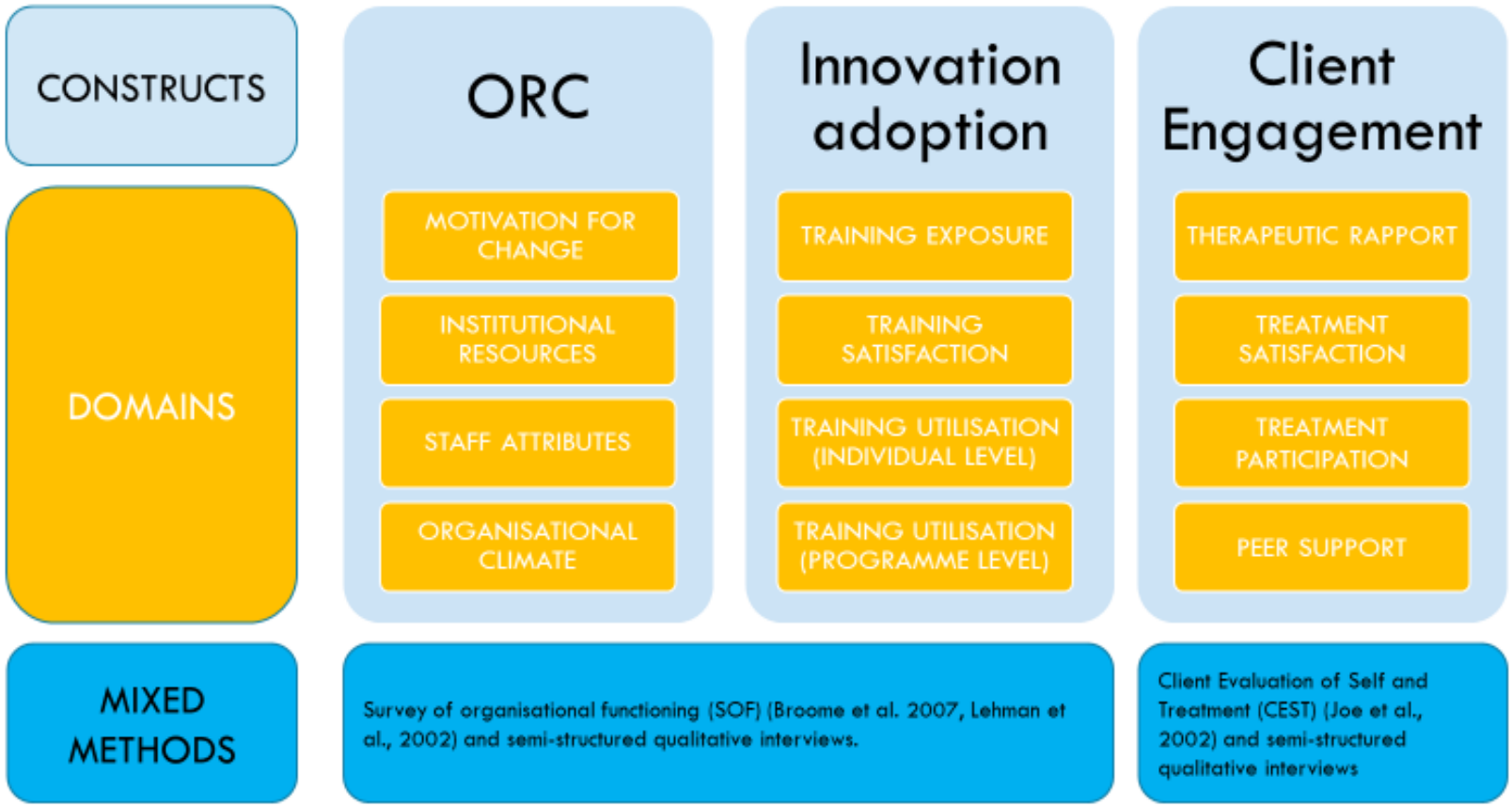


Figure 4. 2 Study concept map.

ORC and innovation adoption were measured using a shortened version of the SOF tool, CEST was used to measure service user engagement, semi-structured interviews facilitated an in-depth exploration of staff views related to the study constructs.

4.5 Research Design: Mixed methods

Across a range of subject areas, it is increasingly viewed as imperative to incorporate both qualitative and quantitative methods in order understand complex research questions (Ghosh, 2016, Sandelowski, 2000a). Although definitions are still evolving, mixed methods can be described as research where, in a single study, the investigator collects data, and analyses and synthesizes data using both quantitative and qualitative approaches (Tashakkori and Teddlie, 2010). This method combines the two main paradigms in research. A paradigm is an accepted set of ideas and/or practices which guide a particular field (Johnson and Onwuegbuzie, 2004). There are differences in the philosophical assumptions between both of these paradigms in terms of epistemology (how we know what we know), ontology (the nature of reality), axiology (values) and methodology (the process of research) (Hanson et al., 2005).

In summary, qualitative research aims to provide an in-depth and *interpretive* understanding of the social world by learning about peoples experiences, perspectives and histories (Ritchie et al., 2013). Quantitative research aims to collect numerical data and is *positivist*, in that it examines the cause and effect between variables (Creswell and Plano Clark, 2007). Combining two methods can allow researchers to corroborate findings in order to provide stronger evidence for their conclusions, or to highlight differences leading to a deeper understanding of a research question (Creswell, 2013, Tashakkori and Teddlie, 2010).

A perceived dichotomy between these two paradigms has created a chasm in academic discourse for decades (Giddings and Grant, 2007, Rolfe, 2006). In this context, the ongoing conflict in the

research field regarding the merits of each approach, has been referred to colloquially as the 'paradigm wars' (Johnson and Onwuegbuzie, 2004). However, a range of commentators state that the differences between these two approaches has been significantly overstated (Neale et al., 2005, Crossan, 2003). Consequently, mixed methods is often described as the *third* research paradigm, which is underpinned by a philosophy of pragmatism. This stance distinguishes itself as it places more emphasis on the result; answering the research question at hand, and less emphasis on the theory underpinning the research (Doyle et al., 2009). This pragmatic approach has been described as a means through which the attention of the researcher can be directed towards more reality based 'methodological rather than meta-physical concerns' (Morgan, 2007,p48).

When using a mixed methods approach, the positivist and interpretivist approaches should be treated as being equal and complimentary (Foss and Ellefsen, 2002). It is advised that there should be no hierarchy of paradigms, even where some studies may decide to operate within a dominant paradigm (Johnson and Onwuegbuzie, 2004). This is a recommended approach as opposed to a diktat, which has been considered necessary in order to reduce any bias towards any one paradigm. This is consistent with a philosophy of pragmatism, which is emphatic towards researchers obtaining the richest possible data (O'Cathain et al., 2007).

Problems in healthcare, such as issues around patient safety or service evaluation, tend to be multi-variate, dynamic, and complex, and a mixed methods approach is particularly suited to addressing these challenges (Carayon et al., 2015). In a review of over 200 mixed methods papers, Bryman (2006) identified 16 key reasons for conducting mixed methods studies. These included providing deeper and more multi-dimensional perspectives of a problem, answering a wider range of research

questions and providing a greater explanation for findings from single approaches. These findings were later corroborated by Doyle et al. (2016) in a discussion paper on mixed methods research. Two systematic reviews on ORC in substance misuse services identified that there was an overall absence of qualitative data on factors relating to ORC, from both a service users and staff perspectives (Kelly et al., 2018, Kelly et al., 2017). No quantitative studies on ORC had been conducted in the context of Irish substance misuse treatment services. The majority of studies conducted on ORC were quantitative and cross sectional, which did not account for ORC as a dynamic concept. It was considered that incorporating qualitative questioning, would allow for some retrospective inquiry and would begin to address this challenge. There was also minimal evidence available on how to address ORC deficits once they are observed. It was thought that the combination of the analysis of numerical data and thematic summation of interview content, would address some knowledge deficits in this area. The qualitative component would help to understand potential causal relationships, as they were identified or not, in the correlational study.

Using mixed methods comes with unique challenges. Mixed methods research takes more time to complete, and this can lead researchers to reduce sample sizes or limit time interviewing participants (McCusker and Gunaydin, 2015). Researchers must understand how to use more than one method and know how to use these methods appropriately. This is a challenge, in particular as some details, such as how to most effectively interpret conflicting results, still require clarification from research methodologists (Johnson and Onwuegbuzie, 2004).

After deciding that a mixed methods approach was appropriate for the study aims, attention was given to the specific design. Many authors have developed typologies, providing descriptions of

different types of mixed methods research (Tashakkori and Teddlie, 2010, Leech and Onwuegbuzie, 2009, Creswell and Plano Clark, 2007). Utilising these typologies is useful, as it facilitates rigor within the research process, and helps researchers to clarify what is it that they have done (Creswell and Plano Clark, 2007). However, progress using mixed methods research is not always linear, and design decisions which have been made rationally at the outset of a project may result in progress and findings which are most unexpected (Bryman, 2006). In general, this process can result in changes to the study design as new findings evolve.

For this study, the first stage in designing this mixed methods study was to decide which typology would answer the research question most appropriately (Doyle et al., 2009). When considering this type of study, there were three principle methodological decisions which required consideration; the timing of each phase of data collection (e.g. concurrent or sequential), the level of mixing of the data (partial or fully mixed) and the emphasis of approach (equal or dominant status) (Leech and Onwuegbuzie, 2009). The type of research question being asked, the length of time available, the expertise of the researchers and the expected audience, provided the majority of justification for the appropriate research design (Creswell and Plano Clark, 2007).

Timing in mixed methods studies is categorized in two ways; concurrent or sequential. Concurrent timing typically means that the two types of data are collected and analysed at roughly the same time. The concurrent approach may be used when time is limited, or when one set of data is to be used to compliment the other (Tashakkori and Teddlie, 2010). The sequential approach may be used for studies such as instrument design, where an iterative process is required (Creswell et al., 2004). In this study, a concurrent approach to data collection was used due to the need to obtain

complimentary data sets and due to time limitations. Researchers also need to consider the emphasis of the approach used in the research. While both methods should be recognized as having equal stature, paradigms can be given equal or unequal emphasis in a study. The weighting may be influenced by the researchers world view, the research question or by practical considerations such as resources (Creswell and Plano Clark, 2007). In this research both paradigms were considered to have equal stature and were given equal weighting in the initial study design.

Finally, a decision had to be made as to when to integrate the two datasets. Data can be embedded at the design level or at the interpretation level following data collection. Additionally, in a sequential design, data can be merged when data from one sequence informs the next (Creswell, 2013). Different combinations of timing, weighting and mixing has resulted in a multitude of typologies. These typologies can be summarized into four 'major types' of mixed methods research; triangulation design, embedded, explanatory or exploratory designs, there are various sub-types of each of these designs (Creswell and Plano Clark, 2007). Typically, a multitude of criteria influence the appropriateness of a chosen design although ultimately, some aspects of decision making on design may be arbitrary. Despite this, it was considered imperative to the integrity of this mixed methods research study to utilise, and clearly articulate, an established mixed methods design (Tashakkori and Teddlie, 2010).

Cross sectional studies are a recommended approach when evaluating services (Prince et al., 2003). A cross sectional survey provided the most appropriate method for this study which explored the relationships between a multitude of variables, explored attitudes and experiences, and tested hypothesis (Levin, 2006). This study involved the acquisition of numerical data through

the administration of validated questionnaires, and in-depth exploration of staff views of ORC and engagement in one-to-one interviews. This study examined the relationship between phenomena identified in questionnaires and a qualitative assessment of how staff experience their organisations and provided a more in-depth understanding of the mechanisms involved in ORC, innovation adoption and service user engagement. A minimal number of studies measuring ORC had been conducted outside the US, with none in Ireland, and no qualitative or mixed methods studies considering ORC had been conducted in the context of addiction treatment services globally. Given the time available to complete this study, giving equal weight to each approach and gathering data concurrently was appropriate for the research objectives in this study.

The most appropriate description for this type of study is a triangulation design: convergence model (Creswell and Plano Clark, 2007). While each approach was given equal status, the data was integrated at the interpretation phase only. This is more commonly known as a *partially mixed* study design (Doyle et al., 2009). This best describes studies where both the qualitative and quantitative phases are carried out independently, and mixing occurs at the interpretation stage.

In this study data was mixed at the interpretation stage. The data from both studies was compared, similarities and differences were explored, findings from both datasets were synthesised and discussed in the context of relevant literature. The study flowchart Figure 4. 3 provides a visual representation of the study design and sequence, while the subsequent sections provide a detailed overview on how the separate phases of the study were operationalised. In order to facilitate ease of comprehension, the quantitative and qualitative components of this study will be described separately. Integration and synthesis of the key findings relating to the study constructs and

concepts occurred withing the discussion where findings were presented in the context of relevant literature and with critical and analytical perspectives.

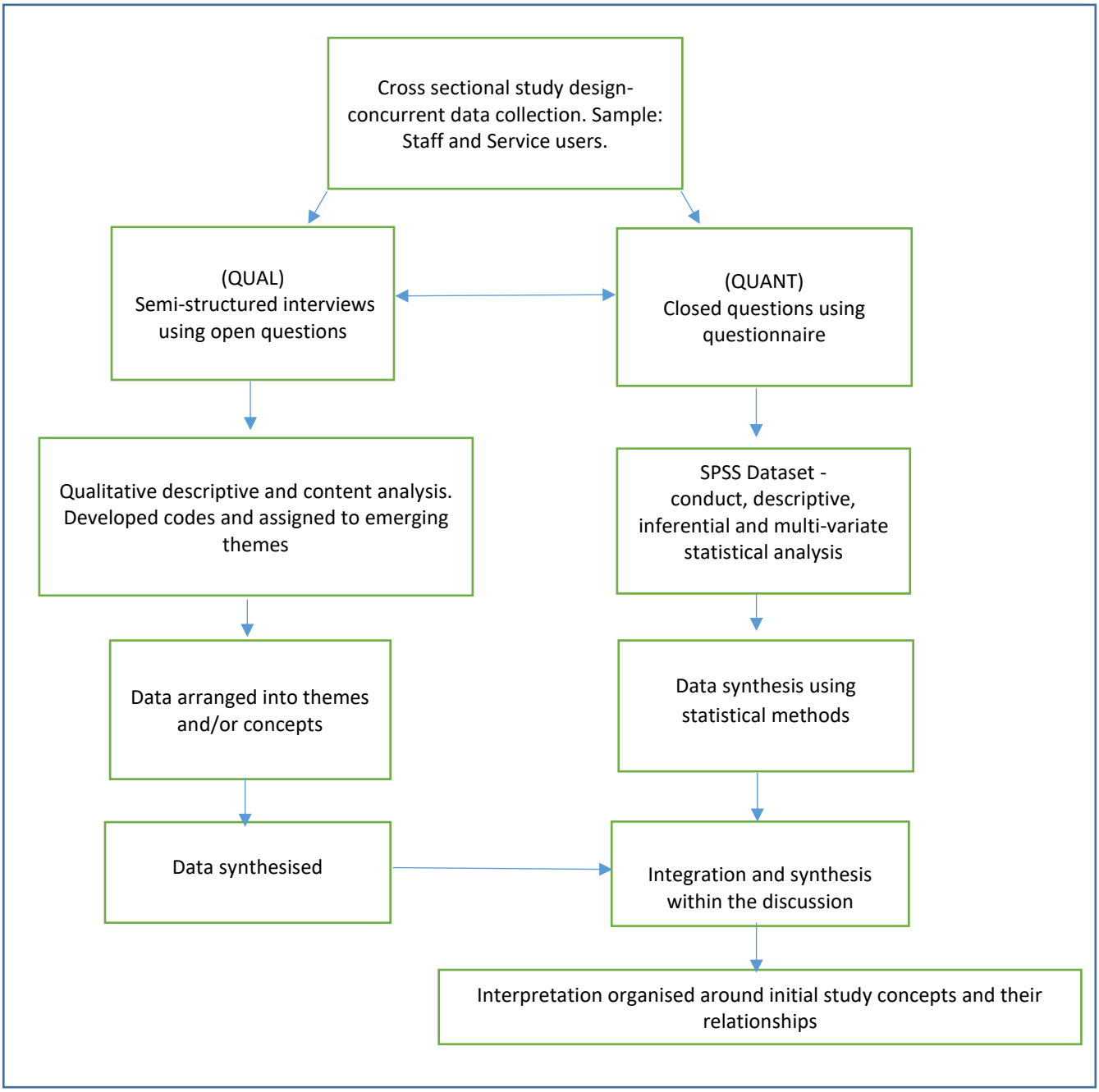


Figure 4. 3 Mixed methods, triangulation design, convergence model- study flowchart

4.6 Quantitative study: (i) An exploration of organisational characteristics and training adoption in Irish community drug treatment services (ii) Organisational attributes and client engagement in community opiate substitute prescribing service's

4.6.1 Aim

The aim of this study was to describe the relationship between (i) staff perceptions of ORC, staff characteristics and the process of training adoption (ii) staff perceptions of ORC, client characteristics and client engagement; in community-based OST services.

4.6.2 Objectives

1. To describe the socio-demographic characteristics of participating health and social care staff and service users accessing substance misuse treatment services.
2. To describe health and social care staff perceptions of ORC in the context of substance misuse treatment services.
3. To describe health and social care staff perceptions of the process of training adoption in the context of substance misuse treatment services.
4. To measure service user engagement with treatment and its associated domains (therapeutic rapport, treatment satisfaction, treatment participation, peer support) in the context of substance misuse treatment services.
5. To describe the relationship between ORC and: (a) the process of training adoption (satisfaction, exposure, individual implementation, service wide adoption) and (b) service user engagement (therapeutic relationship, satisfaction with treatment, peer support, treatment participation).
6. To describe the relationship between health and social care staff characteristics and: (a) ORC (b) the process of training adoption and (c) service user engagement.

7. To describe the relationship between service user characteristics and service user engagement

4.6.3 Null Hypotheses

1. There is no relationship between staff perceptions of ORC and the process of innovation adoption (training, adoption, implementation, integration into practice).
2. There is no relationship between staff perceptions of ORC and service user engagement (therapeutic relationship, satisfaction with treatment, peer support, treatment participation).
3. There is no relationship between staff characteristics and ORC.
4. There is no relationship between staff characteristics and the process of innovation adoption.
5. There is no relationship between staff characteristics and service user engagement.

4.6.4 Research Design

Quantitative research provided a rigorous and systematic approach towards generating information about the subject and allowed objective facts to be statistically analysed and interpreted (Grove et al., 2014). This helped to minimise the sources of bias, allowed the researcher to remain objectively removed from the subject matter and facilitated the testing of hypothesis (McCusker and Gunaydin, 2015). This study used a cross sectional survey design which is an appropriate design to use in order to describe staff characteristics, measure perceptions of ORC, and to ascertain if there is a relationship with service user engagement and/or the process of innovation adoption.

4.6.5 Data collection instruments

The quantitative component of this study involved the collection of socio-demographic data and the self-completion of questionnaires by both service users and staff. It is important to use previously validated questionnaires in order to ensure that the data obtained in the study is high

quality, and the results are generalisable to other settings (Boynton and Greenhalgh, 2004). Both the ORC tool (Lehman et al., 2002) and the CEST tool (Joe et al., 2002) chosen for this study have been specifically developed and validated for use in substance misuse treatment services in the US, and to a lesser degree internationally (Kelly et al., 2017). Staff perceptions of ORC and the process of innovation adoption were measured using the same questionnaire.

The use of questionnaires can encounter difficulties, participants may interpret questions in a different way, there is no way of knowing if the respondents are being truthful and respondents may not think correctly about the context of a particular question (Grove et al., 2014, Miles and Huberman, 1984). In order to account for this, and to increase response rates, all questionnaires were modified for the use of language and spelling in the Irish context, and were written in accordance with the national adult literacy guidelines, which gave consideration to font size, language and the use of pictorial illustrations to clarify questions and answers (NALA, 2017). The title page, colour and overall presentation were designed so as to be aesthetically pleasing to all participants (see **Error! Reference source not found.** and **Error! Reference source not found.**).

4.6.6 Organisational Readiness to Change

As briefly described in the operational definition, the ORC tool developed by Lehman et al. (2002) assesses organisational needs and functioning. This tool was developed following a review of concepts and tools which measure technology transfer in organisations. In a trial on over 500 staff and over 100 services it was shown to have acceptable psychometric properties (Lehman et al., 2002). This tool has subsequently been used to measure ORC in over 20 studies relating to substance misuse treatment services (Kelly et al., 2018, 2017). In a systematic review which

included 26 eligible instruments which measure ORC in healthcare, the ORC tool chosen for this study was scored by the researchers as having the highest construct validity and reliability (Gagnon et al., 2014). The findings in this review and the overall utility of this tool demonstrated in other studies, provide a good basis for the use of this tool in this study. Items measured by this ORC tool and its psychometric properties are included in Table 4. 1 below.

As described in the operational definition, this tool measures four major organisational domains and these domains incorporate 18 subscales and a total of 118 items. Two domains measure programme needs and resources: the motivation for change domain (program needs, training needs, and pressures for change) the program resources domain (office facilities, staffing, training, equipment, and internet access). Programme dynamics are measured within two domains: staff attributes (growth, efficacy, influence, and adaptability) and program climate (mission, cohesion, autonomy, communication, stress, and openness for change). These four domains also represent indicators that may help programs identify potential problem areas (Simpson, 2009).

4.6.7 Training Exposure and Utilisation

The Survey of Organisational Functioning (SOF) developed by Broome et al. (2007) is a superset [i.e. with additional measures] of the ORC tool developed by Lehman et al. (2002). The SOF includes additional measures on job attitudes, workplace practices and training exposure and utilization, as well as ORC (Lehman et al., 2012, Simpson et al., 2009). In order to meet the objectives of this study, the SOF domain on training exposure and utilisation was incorporated into the staff questionnaire.

These measures are briefly described in the operational definition of innovation adoption and are reflective of the 4-stage service change model which was first conceptualised by Simpson (2002). The scales utilized in this domain measure previous training experiences and utilization of training from both an individual and organisational perspective. These measures incorporate four subscales (i) Training exposure (ii) Training satisfaction (iii) individual training utilization (iv) service wide training utilization. These scales have reliable psychometric properties (Lehman et al., 2012a, Joe et al., 2007). See Table 4. 1 for an overview of the psychometric properties of this instrument.

4.6.8 Service user engagement

The CEST tool was developed over a ten year period for use in substance misuse services and includes 16 scales, representing 4 domains; service user motivation and readiness for treatment, psychological functioning, social functioning, and treatment engagement (Joe et al., 2002). For the service user assessment in this study, as described in the operational definition, only the domain on treatment engagement was used. The treatment engagement domain incorporates 36 items and include four subscales: treatment participation, treatment satisfaction, counseling rapport, and peer support. This tool is thought to be particularly suited for use in this study as it has high reliability, validity and has been used to successfully measure factors which have been shown to help to retain service users in substance misuse treatment (Simpson et al., 2009). The CEST tool has been used in previous studies in conjunction with the ORC tool and has shown that ORC measurements are predictors of service user engagement (Simpson et al., 2009, Broome et al., 2007, Simpson et al., 2007). The measures in this tool have been shown to have reliable psychometric properties (Pankow et al., 2012, Garner et al., 2007, Joe et al., 2002). See Table 4. 2 for an overview of the psychometric properties of this instrument.

Table 4. 1 Overview of questionnaire package for staff

Construct and associated concept	Instrument	Number of items	Response options	Validity	Reliability co-efficient (Cronbach's alpha from previous studies)	Amendments for this study
Socio-demographics	1. Central Statistics (CSO) Office census form. (Central Statistics Office, 2016). 2. Survey of Organisational Functioning (SOF). Superset of ORC questionnaire. (Broome et al., 2007, Lehman et al., 2002)	1. Gender, ethnicity, educational levels, discipline, professional qualifications, years of experience, tenure, caseload size (n=8 items)	Categorical	Not applicable (N.A)	1. N. A.	1. Used 8 items only from CSO form. Amended language from SOF questionnaire from US English to Hiberno-English to ensure suitability to Irish context.
Job Attitudes [not reported in this study]		2. Scale: Burnout (n=6)	All items use 1-5 Likert scale. Ratings from 'strongly agree' to 'strongly disagree'	Instrument has been assessed for face validity content validity, and criterion validity Broome et al. (2007)	2. Burnout= 0.74	2. Amended wording from US English to Hiberno-English to ensure suitability for Irish context.
Training exposure and utilisation		3. Training exposure and utilization (n=14 items): 4 Scales: Training satisfaction (n=2), Training exposure (n=5), Training utilization (n=4) (individual), Training utilisation (n=3) (service)	Higher scores equate to a higher perceived value for each item.		3. Satisfaction=0.77 (Joe et al., 2007) Exposure =0.63 Utilisation =0.79 (Lehman et al., 2012a)	3. Amended wording from US English to Hiberno-English to ensure suitability for Irish context.
Treatment centre data	1. SOF (Broome et al., 2007, Lehman et al., 2002)	1. Type of service, main treatment modalities, setting, location, main problem treated, principle service user group (n=6 items)	Categorical	N.A.	N.A.	1. Amended wording from US English to Hiberno-English to ensure suitability for Irish context.

Construct and associated concept	Instrument	Number of items	Response options	Validity	Reliability co-efficient (Cronbach's alpha from previous studies)	Amendments for this study
Organisational Readiness to Change	1. SOF. (Broome et al., 2007, Lehman et al., 2002)	1. <u>ORC:</u> (n=103 items) 4 Scales and 18 subscales: <u>Motivation for change (N=23)</u> • Programme needs (n=8) • Training needs (n=8) • Pressures for change (n=7) <u>Resources (n=25)</u> • Offices (n=4) • Staffing (n=6) • Training (n=4) • Computer access (n=7) • E-communications (n=4) <u>Staff Attributes (n=25)</u> • Growth (n=5) • Efficacy (n=5) • Influence (n=6) • Adaptability (n=4) <u>Organisational Climate, (n=30)</u> • Mission (n=5) • Cohesion (n=6) • Autonomy (n=5) • Communication (n=5) • Stress (n=4) • Change (n=5)	All items use 1-5 Likert scale. Higher scores equate to a higher perceived value for each item. Ratings from 'strongly agree' to 'strongly disagree'	1. Tool was subject to expert review. Over 500 staff members and 100 programmes were used to study the reliability and validity of ORC. A principal components analysis was used to examine ORC factor structure. Reliabilities were computed as measures of internal consistency and relationships of scales with selected service user and programme functioning indicators document their predictive validities. Scales were considered unidimensional overall, but 5 scales had an eigenvalue <1: Pressures for Change, Staffing, Computer Access, Growth, and Efficacy (Lehman, 2002) A systematic review by Gagnon et al, (2014) which included 26 ORC instruments scored this tool most highly at 4 out of 4 for validity and 3 out of 4 for reliability.	1. Only 5 of 18 subscales had values of < 0.70. These subscales were: Pressures for change (.68) Training (.64) Computer access (.66) Efficacy (.68) Autonomy (.56) (Lehman et al, 2002).	4. Amended wording from US English to Hiberno-English to ensure suitability for Irish context.

Table 4. 2 Overview of questionnaire package for service users

Construct and associated concept	Instrument	Number of items	Response options	Validity	Reliability co-efficient (Cronbach's alpha from previous studies)	Amendments for this study
Socio-demographics	1. National Drug Treatment Recording System (NDTRS) data. (Health Research Board, 2016)	1. Administrative details, gender, self- defined sexual orientation, accommodation status, living with, children, area of residence, educational levels, schooling employment status, country of birth, ethnicity, language, reason for referral, i.e. (main drug) (n=14 items)	Categorical	N.A.	N.A.	1. Used 14 items only from NDTRS form. This is standardised national data.
Client engagement	1. Client Evaluation of Self and Treatment (Joe et al., 2002)	1. <u>Treatment Engagement:</u> 4 scales: Treatment Participation (n=12), Treatment Satisfaction (n=7), Counseling Rapport (n=12), and Peer Support (n=5). (n=36 items)		Scales are considered unidimensional. Confirmatory factor analysis demonstrated good cross-structure validity (Greener et al, 2007,Joe et al, 2002)	1. Treatment Participation =.86 2. Treatment Satisfaction=.81 3. Counselling Rapport =.92 (Greener et al, 2007) 4. Peer Support =.94 (Joe et al, 2002)	2. Amended wording from US English to Hiberno-English to ensure suitability for Irish context.

4.6.9 Sample

This study was conducted in community substance misuse prescribing services. In this context, there were two populations which were of interest to this study: (i) health and social care staff who have direct contact with service users (ii) in-treatment service users. Both of these populations were accessed using non-probability convenience sampling and were recruited from a selection of community treatment services in Ireland. Twelve services in total were involved. Inclusion and exclusion criteria for both populations of interest, sample 1 and sample 2, are outlined in Table 4. 3 below. In order to provide geographical diversity, participants were selected from as wide a geographical area as was feasible.

Table 4. 3 Inclusion and exclusion criteria for service users and staff

Service users	Staff
Inclusion Criteria • Service users receiving treatment for substance misuse for longer than one month in publicly funded community and/or residential substance misuse treatment services. • Male or female English speakers who are over 18. • Willing to participate in the study.	**Inclusion Criteria** • Health and social care staff who work directly with service users in substance misuse community prescribing services or in-patient treatment services. • Staff must have worked/volunteered or been on placement at the service more than 14hrs a week for a period of no less than one month. • Staff must be over-18 years.
Exclusion Criteria • Service users who are unable to complete the questionnaire or interview due to the direct (intoxication) or indirect affects (withdrawal) of substance misuse. • Service users who are appear acutely unwell, either mentally or physically.	**Exclusion Criteria** • Staff who do not have direct contact with service users.

4.6.10 Sample size requirements

As this was a clustered study (staff are clustered within a centre and service users are clustered within a centre), the sample size requirements were adjusted to take into account the possible correlation among people within the same centre. However estimates of the intra-cluster correlation coefficients (ICCs) were not available for staff or service users. For this reason, the sample size requirements were presented initially assuming: (1) there was no clustering effect (ICC=0) and (2) assuming ICC=0.01. The initial sample size requirements were as follows:

Staff: A sample size of 118 staff was considered sufficient to detect a medium effect (f2=0.15) in a multiple linear regression with up to 10 independent variables, with a power of 80% a level of significance of 0.05 and a 2-tailed test. However, as staff from the same centre may have been included in the study, it was considered that this may reduce the statistical power. To account for this, the sample size was inflated to n=129. This was based on a design effect of 1.09 (assuming an average cluster size of 10 and ICC=0.01).

Service users: A sample size of 118 service users was considered to be sufficient to detect a medium effect (f2=0.15) in a multiple linear regression with up to 10 independent variables, with a power of 80% a level of significance of 0.05 and a 2-tailed test. However, as service users from the same centre were to be included in the study, this reduced the statistical power. To account for this, the ideal sample size was inflated to n=206. This was based on a design effect of 1.74 (assuming an average cluster size of 75 and ICC=0.01).

4.6.11 Recruitment, access and data collection

i. Recruitment

Participants were recruited from HSE funded community substance misuse prescribing services as per the process outlined in Figure 4.5. One service at a time was accessed.

ii. **Access**

It was imperative to obtain the support of senior managers in substance misuse treatment services if access was to be assured, [see Figure 4.4 for access flowchart]. Effectively, the first three steps in this process were to remain cognisant of the managerial and/or clinical hierarchy in the selected services. Subsequent to obtaining permission to access services, the researcher visited each of the selected services, normally at a staff meeting, in order to explain the purpose of the research to staff members. At a time and place deemed suitable by the service manager, staff and service users were asked to complete the questionnaire and return it to the researcher in a sealed envelope which was opened off site at a later point in time.

A selection of staff were asked if they would be willing to participate in a follow up interview. At all stages of this process, assurances were provided that no treatment service would be identified in the study and that full confidentiality would be assured throughout the project.

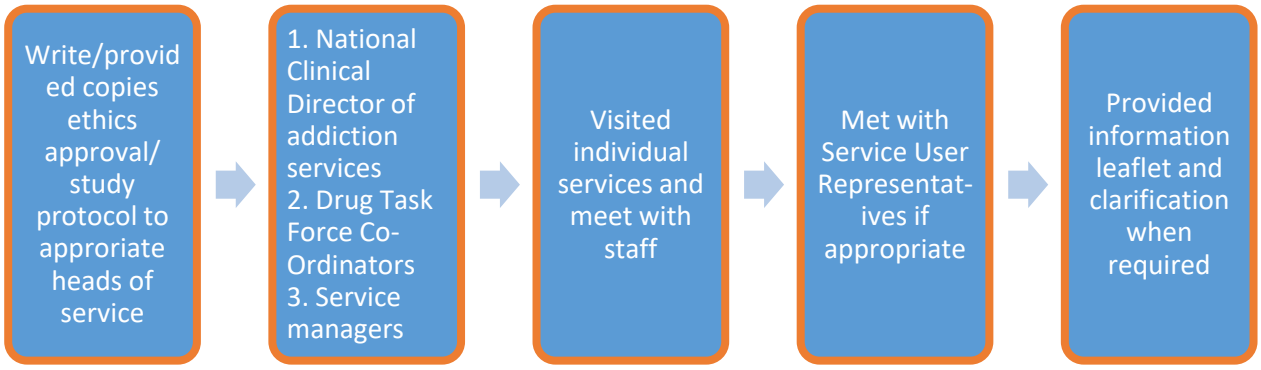


Figure 4. 4 Planned steps to obtaining access to services

The researcher spent consecutive days at each service as deemed appropriate by the service managers but typically this involved spending 3-4 days at each site. Data was collected by one researcher over a one-year period in community prescribing services. All questionnaires were coded to identify the specific service. As the questionnaire was anonymous, consent was implied and written consent was not required as full information about the study was provided in advance to all participants.

The data collection process for staff and service users is outlined in Figure 4.6 and Figure 4.7 below. Service users completed the section on socio-demographics followed by the service user engagement questionnaire, with the assistance of the researcher. Where there were identified issues with literacy, or where participants asked for assistance or clarification, assistance was provided by the researcher. The researcher had personal contact with the study populations and was available to answer any questions for respondents when required. This approach ensured a high response rate for the study, and this also ensured that information was presented in a consistent manner to each participant (Smith, 2012).

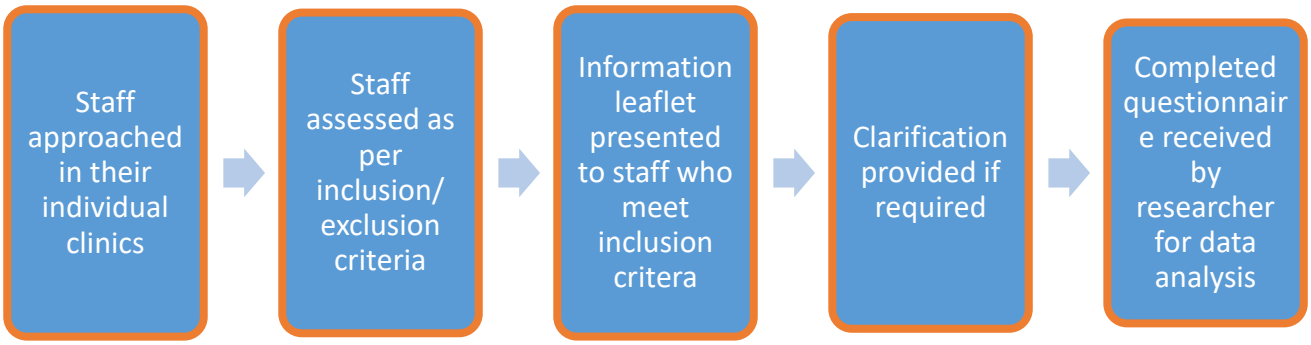


Figure 4. 5 Flow diagram for planned data collection (Staff)

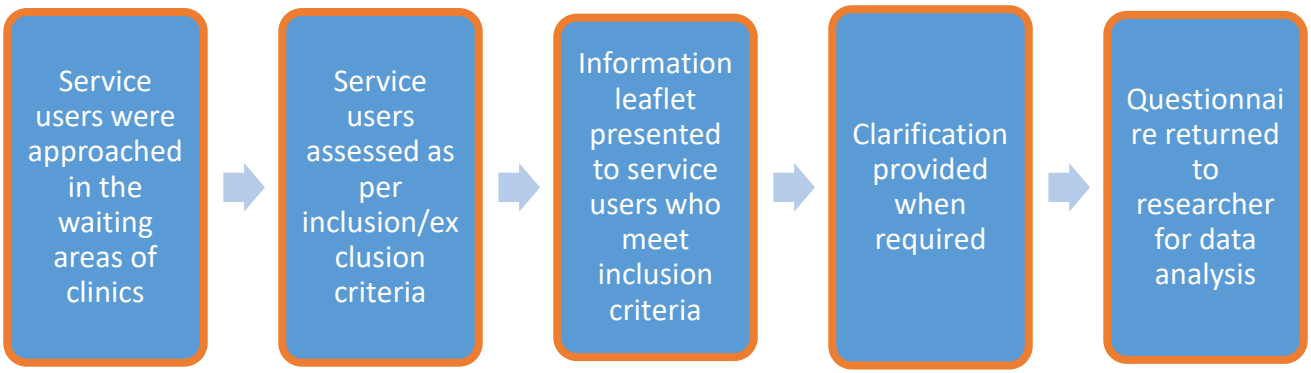


Figure 4. 6 Flow diagram for planned data collection (Service users)

4.6.12 Rigour

Rigour in quantitative research is accomplished through strict accuracy, adherence to detail and discipline (Heale and Twycross, 2015, Grove et al., 2014). These were applied to data collection, collation and analysis in this study. It is accepted that there is no one way to completely eliminate sources of bias from any types of research (Kaplan, 2004, Mays and Pope, 2000). Researchers have an obligation to minimise sources of bias in their studies so as to ensure that the results accurately reflect what is happening in reality.

This research was uncontrolled, and the participants were obtained through sampling in their own natural settings. Selecting participants from a wide geographical area and from both rural and urban settings helped to minimise risks of bias in sampling (Prince et al., 2003). Ensuring full confidentiality and anonymity in participation helped to minimise the impact of extraneous variables and bias, as participants felt that they could answer the questions honestly. Once the data was collected it was important to analyse it systematically in order to eliminate any of the researchers own bias (Parahoo, 2014). The methods utilised in this study were clearly described to others in order to facilitate full transparency. Rigour was also enhanced through measurement of validity and reliability (Heale and Twycross, 2015).

4.6.13 Pilot Testing

Conducting an effective pilot study is an invaluable part of the process of designing a methodologically robust study (Van Teijlingen et al., 2001). There were no obvious feasibility issues identified for the execution of this project. A pilot study is typically conducted in order to identify feasibility issues with the research instruments and study design and to refine methodology before conducting the main study (Grove et al., 2014). The questionnaires were reviewed by eight senior experts in the field and were subject to further review during a pilot study (n=2) (Hertzog, 2008). Minor amendments were made following expert review, but no further amendments were made following the pilot study as they were not required. Data obtained in the pilot testing was not used in the analysis, as it is not appropriate to do this in quantitative studies (Ritchie et al., 2013).

4.6.14 Validity

A study method is valid when it measures, as accurately as possible, what it stated it would measure (Prince et al., 2003). Shadish et al. (2002) identify that validity, in particular for quantitative studies can be measured in four different ways; (i) statistical conclusion validity (ii) Internal validity (iii) construct validity (iv) external validity.

If statistical conclusion validity is maintained then the statistical analysis of a study will truly represent the relationship between the variables, both dependent and independent. Several factors may adversely affect statistical conclusion validity. Using unreliable instruments, having too small a sample size, sample size characteristics which are too diverse (Coolican, 2014). In order to address this, this study used instruments which had acceptable reliability and in so far as possible included a sample size which allowed for sufficient statistical power.

Internal validity relates to the attention to detail, the rigour used in conducting the study and the extent to which the researcher explains causal relationships, other than those measured or explored specifically by the study. Internal validity is maintained when the results obtained from a sample are reflective of what occurs in the real-world setting. Internal validity can be compromised in instances where events occur outside the study that can influence results. Participants may misinterpret, or a question may be answered without due consideration of the context of the question. Selecting a sample which is not generally representative of a particular population can also compromise internal validity. This study used a non-probability convenience sample, which recruited directly from a representative population. As specified, due consideration was given to sample selection and to the questionnaires in order to avoid misinterpretation.

External validity, often referred to as generalisability, refers to how the results of a study can be generalised to other or similar settings to those in which the study was conducted (Grove et al., 2014). In this study, effects may have occurred purely due to the conditions of a study which may not occur in normal working environments. The environmental conditions in which the information is gathered such as noise, temperature or even the characteristics of the researcher had the potential to affect the generalisability of results (Parahoo, 2014). The data was collected in as a consistent manner as possible as it was thought this would help to mitigate against threats to external validity. If the research instrument is not clear and is unnecessarily cumbersome, this will place demands on participants which could influence how they answer questions. The questionnaire package that was used in this study was used in a large number of previous research studies, and has achieved good response rates (Landrum et al., 2012, Lehman et al., 2012, Simpson et al., 2009).

Construct validity is the degree to which the instruments employed in this study are actually measuring what they report to be measuring (Heale and Twycross, 2015). The tools that were used in this study have been reported as having high construct validity (Gagnon et al., 2014, Lehman et al., 2012, Broome et al., 2009). Perceived threats to construct validity can come from (i) variables which have not been considered or measured or confounding variables, (ii) hypothesis guessing where participants may seek to influence the result as evidence from this study may be used to influence public policy or (iii) researcher expectations, where the researcher may unintentionally try to influence participants (Grove et al., 2014, Reichardt, 2000). Face validity, also called content validity, is a type of validity where a superficial and subjective assessment of whether or not your study or test measures what it is supposed to measure is conducted (Parahoo, 2014). The staff

questionnaires were reviewed for face validity and general suitability by eight experts in the field and [see **Error! Reference source not found.**]. In order to address other threats to validity, such a s researcher expectations, a consistent approach was used towards all participants and this approach was agreed with the research team in advance. The researcher also appraised their own behaviour by use of a reflective diary. The risks of hypothesis guessing was thought to be low, as the study explored the relationship between two independent groups, and the sequencing of questions in the ORC questionnaire was randomised.

4.6.15 Reliability

Reliability refers to the consistency of a measure. This is the ability for a study to be repeated in the same conditions and achieve the same results (Grove et al., 2014). This should mean that the null hypothesis included in this study can be disproved equally in the wider populations examined in this study. This means using tools which will measure specifically what they say they will. It is at best only possible to provide an estimate of the reliability of an instrument. Cronbach alpha is a universally utilised test to determine the internal consistency of an instrument, the values range between 0 and 1 with an acceptable reliability score being 0.7 or higher (Heale and Twycross, 2015). However, some authors argue that this figure is arbitrary and is subject to what is being measured (Lance et al., 2006). Cronbach alpha scores for all instruments used in this study were assessed to in order to determine their suitability.

4.6.16 Data analysis

Data analysis is conducted in order to organise and present data in a meaningful way (Grove et al., 2014). All items on the questionnaires required coding with individual numerical identifiers and data from questionnaires was entered onto SPSS accordingly. Data was entered into the SPSS data

set manually and a selection of these (n=10) was cross checked for accuracy in order to ensure rigour. Data was analysed using SPSS software and was used to describe and summarise the data, identify relationships between variables, compare variables, identify the difference between variables and forecast outcomes.

Data was communicated clearly using tables, graphical displays and narrative synthesis. Categorical information and continuous variables were summarised using descriptive statistics. Bivariate analysis was used to determine the relationships between variables. For staff level data, linear random-effects regression models with centre as a random effect were used to investigate the relationships between the independent variables of staff perceptions of ORC and staff characteristics and the dependent variables of process of innovation adoption (training, adoption, implementation, integration into practice). A separate regression model was used for each dependent variable. For service user-level data, linear random-effects regression models with centre as a random effect was used to investigate the relationships between the independent variables of staff perceptions of ORC (averaged at the centre level) and service user characteristics and the dependent variable of service user engagement. The process of data analysis for each of the quantitative studies is described in detail in Chapter 5 [section 5.2.3] and Chapter 6 [section 6.2.5].

4.6.17 Ethical considerations

It is important to maintain ethical integrity through all stages of the research process, and it is important to ensure that no participants were harmed as a result of participating in this study (Parahoo, 2014). The Declaration of Helsinki ethical guidelines was used to guide the execution

of this study (World Medical Association, 2013). In general terms the researcher was guided by the ethical principles of beneficence (to do good) and non-maleficence (to do no harm) (Levine, 1988). The rights to (i) Self-determination (ii) Privacy (iii) Autonomy and confidentiality (iv) Fair treatment (v) Protection from harm were considered and respected at all stages of this project (Grove et al., 2014). These rights and principles provided a basis for the questionnaire package as well as the overall study design and were strictly upheld by the researcher through their approach to participants and data management. Ethical approval was approved under national protocols (Health Service Executive, 2016b). As a part of obtaining this approval data was stored and managed in accordance with a legally compliant data management policy (University College Cork, 2013).

4.6.18 Potential risks and benefits for participants

Service users:

The overall risks were considered to have a low probability of occurring and were considered to be non-serious. It was considered that being in treatment for a substance misuse problem may in itself be distressing for some individuals. Discussing any aspect of treatment may have caused emotional upset for some service users. It was planned that if a service user became upset, they would be advised that they could discontinue their participation in the study and/or they would be offered the opportunity to speak with an appropriate staff member. In practice, involvement in this study appeared to help service users to think about what aspects of treatment worked for them and what did not, and how this affected what they wanted to gain from treatment. It was anticipated that participation may be of potential benefit to service users as that they would enjoy contributing to the improvement of services and potentially helping others. Several service users expressed that

they were happy to contribute to research which could improve services. No participants discontinued participation because they became distressed or were unhappy with the process.

Staff:

Involvement in this study presented a low risk to staff. Participating in the study was considered likely to cause some inconvenience to staff in respect of the use of their time. Staff were fully informed of their right not to participate in the study. Participation allowed staff the opportunity to consider what aspects of the organisation is working well and what aspects might be improved. It was considered to hold potential benefits for staff to know that their views are considered to be important. Several staff expressed that they felt it beneficial to them to know that they may be contributing to the improvement of services or helping others through their participation.

4.7 Qualitative study: They don't actually join the dots': An exploration of organisational change in Irish opiate community treatment service's

4.7.1 Aim

The purpose of this qualitative study was to explore participants perceptions of what aspects of community OST services work effectively and what aspects do not work effectively. More specifically, this study focused on what organisational factors might facilitate or inhibit services in adopting new innovations and supporting client engagement. This exploration focused on staff with service user contact who are employed in these organisations.

4.7.2 Objectives

In addition to developing an overall understanding of how staff see treatment services, it was envisaged that that the interviews for all participants would help to gain a better understanding of:

- What aspects of these services work well.
- What aspects of these services could be improved.
- How might these improvements (if any) be accomplished.
- What innovations they have successfully adopted in the past.
- How can these services successfully adopt innovations in the future.
- How do services facilitate or inhibit service user engagement with treatment.
- How organisational readiness to change influences or is linked to innovation adoption and client engagement.

A principal objective of this qualitative study was to collect complementary data for a concurrent quantitative study, the objective of which was to measure the relationship between staff perceptions of ORC and two areas: (i) service user engagement with treatment (ii) the process of innovation adoption.

4.7.3 Qualitative research design

Qualitative research traditionally begins with *how* or *why* questions and aims to explore what is happening. This type of research includes a multitude of approaches with sometimes conflicting assumptions, resulting in difficulties when choosing an appropriate approach (Ritchie et al., 2013). Despite this, the central paradigm holds true, that the social world is actively constructed by human beings, and that human behavior can only be understood when the context and thinking process that give rise to particular behaviours are studied (Parahoo, 2014). Qualitative research consistently takes an 'interpretive, naturalistic approach to its subject matter' (Denzin and Lincoln,

2011,p2). A naturalistic approach implies that things are studied in their natural state, and there is no manipulation of the subject of inquiry. The specific chosen approach for qualitative research is governed by its aims and, in general, its methods are characterised by generating words rather than numbers for data analysis (Braun and Clarke, 2013).

Qualitative data can reflect a participants subjective meanings and can provide an insight into how social and cultural influences can affect respondents (Foss and Ellefsen, 2002). This provides a deeper understanding of subject matter which is something that may not be achieved as easily through using a quantitative approach (Ritchie et al., 2013). Data is generated in a context where the researcher is a primary instrument. Thus, the personality of the researcher may play a more significant part in qualitative research, and it is argued by some that this can affect the objectivity of studies (McCusker and Gunaydin, 2015, Parahoo, 2014). Others believe that the co-construction of meaning, which is accomplished as a result of the interaction between the researcher and the subject, is an extremely valuable aspect of qualitative research (Ritchie et al., 2013).

Qualitative research can use a multitude of approaches such as ethnography, phenomenology or grounded theory (Denzin and Lincoln, 2011). Methods for the acquisition of qualitative data can be based on data acquired through observations, interviews, focus groups, reflective notes or biographical methods such as life histories or narratives (Silverman, 2013). Analysis of the data starts from when the data is collected, and every attempt should be made to determine meaning from it. Unlike quantitative research, data analysis in qualitative research seeks to develop explanations for phenomena at the level of meaning rather than cause (Ritchie et al., 2013).

In this study, the concepts under examination were process based and complex, and this was particularly suited to exploration through qualitative inquiry (Ritchie et al., 2013). In this case, the objective was to provide a deeper understanding of how different aspects of service delivery relate to each other in a concurrent quantitative study. This study component used a qualitative descriptive design (Sandelowski, 2000b). This type of study design is distinct from other qualitative methods, it is not used to develop a theory (grounded theory) offer an interpretive meaning of an experience (phenomenology) nor is it used to offer the richest type of description (ethnography). While some have argued that this particular qualitative approach may not offer a sufficient a depth of understanding, it has been argued that it can achieve more accurate descriptive and interpretive trustworthiness (Sandelowski, 2000b).

Qualitative description is noted to be particularly suitable for research in healthcare as it provides rich, straightforward and factual explanations for different perspectives on a single phenomenon (Colorafi and Evans, 2016, Neergaard et al., 2009). This qualitative approach is also said to be particularly appropriate for use in mixed methods studies (Neergaard et al., 2009). As well as ascertaining views on phenomena about which little is known, this approach also facilitated cross comparison with quantitative data, which was necessary for a mixed-methods triangulated, convergence design. Semi-structured interviews were used in order to minimise bias from the researcher, ensure consistency, and provide a lucid description of the constructs under investigation so that these could be readily understood by policy makers and researchers (Sandelowski, 2000b). This also enabled cross comparison with quantitative data, while facilitating a more in-depth exploration of the constructs under examination (See Appendix 6 for inactive content for qualitative interviews).

4.7.4 Sample

The aim of this study was to explore and describe perceptions in staff who work in community based OST services. The sample was accessed as per inclusion/exclusion criteria described in the quantitative study in Figure 4. 5. In order to accomplish the research objective, the researcher conducted in-depth interviews with a number of participants from this group. This study involved the investigation of specific phenomena in a specified context and selecting a homogenous sample most effectively met the study aims (Ritchie et al., 2013).The researcher selected participants from a sample of those who completed the survey. Within these confines, the researcher attempted to select participants from a range of demographic backgrounds and professions. This is described in more detail in Chapter 7.

Guidance on how to ascertain the sample correct sample size in qualitative research is ambiguous (Marshall et al., 2013). The size of the sample required depends on the nature of the topic, the quality of data and the study design (Graneheim and Lundman, 2004). As the aim of this inquiry is to uncover meaning, generalizability is not a guiding criterion in determining sample size (Silverman, 2013). A wide range of established researchers suggest that the sample size obtained in qualitative research is often decided by factors such a time limits and resources, which are *outside* of the research itself (Baker et al., 2012). Overall, it is suggested that for the staff population that is reflective of those included in this study, a dozen participants is ample (Alder and Alder, 2012). Thematic saturation is also something that was considered, in that when no new themes emerge from the data, data collection was considered complete (Baker et al., 2012).

4.7.5 Recruitment and Access

Participants were accessed and recruited as per the process described in the quantitative study. Qualitative data was collected concurrently as per the steps outlined in Figure 4. 5. In addition to these steps, all participants had to sign a consent form before taking part in the interview.

4.7.6 Data Collection

There are three principal approaches to interviews: a structured interview, a semi-structured interview and an unstructured interview (Mitchell, 2015). The correct choice should be determined by the research question (Watson et al., 2008). In this case, the purpose of the interview was to explore staff perceptions of specific phenomena. Data for this study was collected using a semi-structured interview and this allowed the participant to openly explore their experiences within the boundaries of the study aims (Mitchell, 2015). Socio-demographic information as per the socio-demographic content in questionnaires in **Error! Reference source not found.** was collected from e ach participant, prior to commencing the interview.

There has been an overall lack of methodological guidance around how to provide justification for use of semi-structured interviews. In response to this, Kallio and colleagues (2016) conducted a systematic review and identified five steps that should be used to justify, plan and implement the use of semi-structured interviews in qualitative research. These are designed to help to ensure rigorous data collection and trustworthiness throughout the research process. These steps and the corresponding mechanisms utilised in this study to date are shown in Table 4. 4.

Table 4. 4 Application of the process for developing semi-structured interviews (Kallio et al, 2016)

Steps	Mechanism	Outcome
1. Identifying the pre-requisites for using semi-structured interviews	Described	Knowledge of interview structure and approach increased
2. Retrieving and using previous knowledge	Conducted two systematic reviews on ORC (Kelly et al., 2017, 2018) and theoretical analysis (as per section 1.3 and 1.4) of key concepts have informed the interview schedule	Questions informed by review findings
3. Formulating the preliminary interview guide	List of questions and prompts designed to illicit richest information on three key concepts (See Appendix 6.2 and 6.4, for qualitative interview schedules)	Interview guide completed
4. Pilot testing the interview guide	Pilot study (n=2)	Pilot study conducted
5. Presenting the complete semi-structured interview	Confirmation following pilot study	Interview schedule finalised

4.7.7 Data analysis

There is a wide range of approaches to qualitative data analysis, many of which are based on different philosophical beliefs. It is argued there are no clearly agreed rules or procedures to qualitative analysis (Ritchie et al., 2013). In this respect, data analysis in qualitative research has been described as the most 'complex and mysterious' aspect of conducting qualitative research (Thorne, 2000,p68). There is also some inconsistency in the literature in terms of how to understand and approach analysis and, in this context, several experts in the field have attempted to offer clarification to other researchers (Braun and Clarke, 2006, Thorne, 2000).

In general, qualitative research is based on the analysis of fieldnotes, interview transcripts, pictures or documentary evidence. The overall objective of the analysis is to organise and reduce large and unwieldy amounts of information into a format in which it can be understood (Corbin et al., 2014, Denzin and Lincoln, 2011). Data analysis is often described as both an interactive and an iterative

process which occurs concurrently with data collection (DiCicco-Bloom and Crabtree, 2006). Whatever analytical approach is chosen, it is imperative that procedures utilized in qualitative analysis should be 'systematic, rigorous and complete' (Neale et al., 2005,p1589). It is also suggested that adapting a flexible approach to analysis will enable the researcher to develop procedures in response to ongoing challenges (Elliot and Timulak, 2005). For example, it was necessary to adopt questions and use probes to elicit interviewee responses during this study.

Qualitative content analysis has been identified as the most appropriate type of analysis where a qualitative descriptive approach is used (Sandelowski, 2000b). Content analysis is a technique frequently referred to in qualitative research which is used to analyse words and/or phrases in text documents (Colorafi and Evans, 2016). A principle decision which has to be made when analysing qualitative data in this way, is whether the analysis should focus on a more literal interpretation of the text known as the *manifest* content, or on the underlying meaning of the text known as the *latent* content (Graneheim and Lundman, 2004). Analysis of the *latent* content of this data was considered appropriate for the objectives of this mixed methods study, where a more in-depth interpretation of qualitative data is required for enriching quantitative data and understanding phenomena which had not been explored previously in the context of substance misuse treatment services.

Not unlike thematic analysis, content analysis can be used to identify significant and emerging themes in the interviews (Vaismoradi et al., 2013). In order to facilitate this, audio tapes of interviews were professionally transcribed which allowed for careful analysis of their content. The content of the interviews was analysed with the researcher reading and re-reading data in order to

identify emerging themes and categories. In order to ensure that the large amounts of data could be interpreted accurately, 'meaning units' were attached to common elements in the data, typically by using a word, symbol or phrase (Erlingsson and Brysiewicz, 2017). These 'meaning units' were then condensed into codes where the core meaning was preserved. This is commonly known as 'coding' (Grove et al., 2014). Common elements in the transcripts were grouped together in accordance with these codes, and when new data emerged, new codes were developed accordingly.

Content analysis is often broken up into two distinct types of analysis; inductive and deductive although it is argued that analysis is never purely either one of the other (Elo and Kyngäs, 2008). Deductive analysis often begins with an existing framework and is often used where a researcher wishes to retest existing data in a different context and can begin with an existing interpretative framework (Yates and Leggett, 2016). An inductive approach involves organising through coding, creating categories and abstracting meaning and is recommended where there is not much pre-existing knowledge (Flick, 2018, Elo and Kyngäs, 2008). Many qualitative studies include elements of both approaches (Yates and Leggett, 2016). As there was little pre-existing knowledge of ORC from a qualitative perspective, it was decided that using an inductive approach to the data analysis was appropriate (Bengtsson, 2016). Once the interviews were synthesised and summarised the findings were cross compared with quantitative results (See Chapter 8).

4.7.8 Trustworthiness

In qualitative research, truth or trustworthiness has been described as another word for validity (Silverman, 2013). There are a range of strategies which can be adopted by researchers in order to increase trustworthiness, and these should be chosen to match the particular study (Shenton, 2004).

Trustworthiness is based on four interdependent concepts; *credibility*, *dependability*, *transferability* and *confirmability* (Thomas and Magilvy, 2011, Elo and Kyngäs, 2008, Patton, 2005). These concepts were considered at every stage of the process, from preparation to reporting results, in order to maintain the trustworthiness of the research process (Elo et al., 2014).

4.7.8.1 Credibility

Credibility refers to the focus of the research and how well the data and analytical process affect the outcome of the research (Graneheim and Lundman, 2004). Credibility can be maintained through obtaining the right type of data, in the right circumstances, from the correct selection of participants. The interview design, setting, rapport with interviewer and accurate transcription, coding and analysis of data were all important considerations here (Silverman, 2013, Watson et al., 2008, Dearnley, 2005). In this study, interviews were carefully designed, the setting was given careful consideration, recordings were professionally transcribed, and all interviews were cross checked for accuracy by the researcher.

The success of qualitative research can depend on the accuracy of the coding process (Hsieh and Shannon, 2005). In this context, Sandelowski (1998) cautions against the utility of consulting experts in qualitative research as only the interviewer is significantly immersed in the research. However, as the researcher had no previous experience of qualitative research, it was necessary to consult with experts in this area [the research team] to ensure the accuracy of meaning units, and subsequent codes. The provision of an illustration of how meaning units and codes were obtained for this study in several team meetings also facilitated the overall credibility of the process (Erlingsson and Brysiewicz, 2017, Graneheim and Lundman, 2004).

4.7.8.2 Dependability

Dependability in a study refers to how clearly evidence of adhering to accepted research processes is presented (Holloway and Galvin, 2016). While researchers may need to respond to evolving requirements to explore new concepts or ideas, decisions must be made in a rational and consistent manner and all of these judgements should be accounted for (Graneheim and Lundman, 2004). Consistency here was achieved through maintaining open discussions with the research team involved with this study and establishing a clear audit trail for all research activities through appropriate record keeping and storage of data. While a consensus for methodological, analytical or theoretical decisions between researchers was not expected, the process involved in making decisions has been made clearly visible to others at all stages.

4.7.8.3 Transferability

Transferability refers to the extent that information can be transferred to other environments or cohorts (Polit and Beck, 2013). In order to support this, precise details of the sampling strategy used, characteristics of the participants, data collection process and process of analysis has been provided [See Chapter 7] (Elo et al., 2014, Graneheim and Lundman, 2004)

4.7.8.4 Confirmability

Confirmability occurs through the establishment of the three previous conditions of credibility, dependability and transferability (Thomas and Magilvy, 2011). In order to safeguard confirmability, the researcher took a reflexive approach. Reflexivity has been described as one of the most important components for maintaining the integrity and overall credibility of qualitative research (Darawsheh, 2014, Fontana, 2004). The specific meaning of, and process involved in reflexivity, continue to be the subject of discussion. In simple terms, reflexivity pertains to a

process which researchers engage in to generate awareness of their own personal bias, and minimize its impact on what is an intersubjective research process (Finlay, 2002). The researchers own philosophical stance sits within a construct of multiple realities of the interviewees, who all offer their own unique perspective. While conducting qualitative research, bias can manifest itself the way a researcher feels, perceives or acts in a particular situation, (Dowling, 2006). This can allow the researchers own values to influence the process which, in turn, may affect how an interview might be conducted, or how results are interpreted.

In this study, the reflexive process was supported through the use of a reflective journal or diary where written reflection on the interviews and other events took place (Dowling, 2006). These reflections were discussed with appropriate third parties [JH,AOD] who questioned assumptions made, which also helped to increase objectivity further. This approach facilitated a process whereby the researcher avoided misinterpretation, and facilitated understanding of phenomena as they were experienced (Jootun et al., 2009). This allowed the researcher to engage in learning and improvement throughout the research process. It is widely accepted that maintaining reflexivity is important. However, it was neither possible, nor desirable to remain totally detached from participants during the research process (Jootun et al., 2009). Utilising one's self effectively helped to develop positive relationships, engage participants, and enrich the quality of the data. Overall, maintaining reflexivity allowed the researcher to consider and explain the impact of themselves on the process, by clarifying the nature of the relationship between themselves and the participants.

4.7.9 Pilot study

The justification for executing a pilot study has been provided in section 4.6.13. As with quantitative research, pilot testing for qualitative research is described as a critical part of the

research (Ritchie et al., 2013). Pilot testing was continued until agreement was reached with the research team that the interview schedule and process would generate the sufficient depth and clarity that is required in order to meet the study aims. For the qualitative component, based on feedback from participants, it was thought that the interview schedule may require modification in order to ensure that the aims of the study were being satisfied, but no amendments were made to the interview schedule following the pilot as they were not deemed necessary. Unlike the quantitative aspect of this study, the qualitative data obtained in the pilot was considered appropriate for use in the final analysis (Ritchie et al., 2013).

Chapter 5: An exploration of organisational characteristics and training adoption in Irish community drug treatment services[12]

5.1 Introduction

This is a report on a scientific study which explored the relationship between organisational readiness to change, staff attributes and training adoption in 12 Irish community prescribing services in Ireland. Contextual information and a justification for the study will be provided. The methodological approach for this study will be described in detail, followed by presentation of and critical discussion of the results. Limitations of the study will also be explored before offering some concluding remarks and proposing future directions.

Across developed countries, where both licit and illicit drug use is common, problematic opiate users have a disproportionate social, health and economic impact (EMCDDA, 2020b, Godfrey et al., 2004). In terms of mental and physical health, homelessness and high risk of mortality, delivering effective treatment to this population of drug users is characterised by its complexity (Darker et al., 2015, EMCDDA, 2019a). An increasing age profile and a diversification in the type and potency of drugs used has compounded this complexity and placed additional demand on health services to implement new technologies in order to adopt to the changing needs of this population (Jannetto et al., 2019, Public Health England, 2016). In the last two decades, during periods of increased demand and reduced resources, treatment services have also had try to adopt to new life-saving technologies, many of which have demanded significant changes to practice.

[12] KELLY, P., HEGARTY J., DYER KR., O DONOVAN A., 2021a. An exploration of organizational characteristics and training adoption in Irish community drug treatment services. Cork, Ireland: University College Cork. [Under review; *Substance use and Misuse*]

These technologies have included the provision of ‘take-home’ naloxone to reduce overdose deaths, new treatments for blood borne viruses, and new psycho-social treatments (O’Shea et al., 2017, Millar, 2017, McAuley et al., 2015). Implementing these technologies successfully often involves multi-level organisational ‘buy-in’ which, at a minimum, involves additional efforts from staff, and the provision of appropriate resources to support successful implementation.

Opiate substitution therapy (OST) such as methadone and buprenorphine, typically delivered in community settings in conjunction with psycho-social support, is effective, and reduces the physical, psychological, social harms and economic costs associated with problematic opiate use (Gossop, 2015, Darker et al., 2015). Despite the effectiveness of treatment, OST services face challenges which arguably are unique in healthcare provision. In relation to the structure and delivery of OST, scientific evidence regarding the efficacy of treatment has sometimes been dismissed by key decision makers in favour of ideologically or morally based objections to drug use (Duke and Thom, 2014). In this context, in order to influence public discourse and contribute to policy, it is imperative that appropriate scientific evidence is made available, not just that specific types of treatment types work well, but *how* they work and what types of organisational structures and practices will best support their implementation.

Little scientific evidence is available in relation to what type of organisational attributes can most effectively support the implementation of new technologies, and more generally we know little about the process and dynamics of OST services (Kelly et al., 2017). This is because, research in the area of drug treatment, has traditionally been focused on categorical factors or disease states, and not on the process and dynamics of treatment. This has resulted in a dearth of knowledge, and

a lack of consensus in relation to our understanding of substance misuse treatment organisations and the systems in which they operate (Van de Ven et al., 2020, Glasner-Edwards and Rawson, 2010). In this respect, little has changed since over two decades ago when Ethridge and Hubbard (2000) observed that this knowledge deficit occurred due to the multitude of variables involved and insufficient available frameworks for organising or evaluating substance misuse treatment services. These challenges, relating to drug treatment services are also reflected within healthcare research more generally, where a complete understanding of mechanisms which facilitate or inhibit the process of change or knowledge transfer has not yet been attained (Lewis et al., 2020). When an understanding of implementation strategies has been established in healthcare settings, their generalisability from context to context has not been well established (Lewis et al., 2020). What we do know is that overall failure rates for organisational change in healthcare are high at between 30%-90%, depending on how the change is measured (Jacobs et al., 2015). If we are to successfully plan and design services, then it is imperative that we gain further understanding of *how* they work and what mechanisms will support the implementation of practices.

From a service level perspective, many authors have attributed the failure of knowledge transfer to an organisations inability to establish sufficient *organisational readiness* (Rafferty et al., 2013, Vakola et al., 2013). These observations are reflected in work from within the field of organisational development, which is based on the *human relations* study of organisations. From within this field, *Organisational readiness to change* (ORC) is identified as a key concept and an important determinant of the process of innovation adoption (Ford and Foster-Fishman, 2012). ORC is multi-faceted concept which is subject to ongoing conceptual discussion from both a theoretical and operational perspective (Attieh et al., 2013, Weiner et al., 2008). However, ORC

has effectively been defined as a shared psychological construct of whether staff are collectively *willing* and *able* to support innovations and change (Weiner et al., 2008, Miake-Lye et al., 2020). This process of change implementation is governed by an individual and organisational commitment to change and is heavily influenced by organisational dynamics (Lehman et al., 2011). The operationalisation of ORC in healthcare practice has been varied and is often dependent on the specific context in which it is applied (Gagnon et al., 2011).

Within substance misuse services, a tool developed by Lehman and colleagues (2002) has shown promise for use in substance misuse services. This tool is shown to have a high sensitivity and construct validity, providing a good basis for its use (Gagnon et al., 2014). Further systematic reviews have demonstrated the utility of this tool (or a modified version) where it has been used effectively as a measure of change readiness and a strong predictor of innovation adoption, but also as a measure of organisational functioning relating to service user outcomes (Kelly et al., 2018, Kelly et al., 2017). ORC domains have been shown to relate to greater training satisfaction and a greater likelihood of implementation (Lehman et al., 2012a). Staff who see their programmes as having poorer resources are less likely to have exposure to training and are less likely to utilise training and where staff feel like they have more influence and growth opportunities they will utilise training more, while a good organisational climate (clearer mission, better cohesion, more autonomy, better communication and lower stress) is a significant predictor of innovation adoption (Kelly et al., 2017). Within studies where ORC has been measured, individual staff characteristics such as job tenure and levels of education have also been identified as having a relationship with the implementation of training and evidence-based practice (Lundgren et al., 2012, Lundgren et al., 2011a). It is clear that, utilising ORC measurements in conjunction with other variables in

practice settings, will help us to improve our understanding of what makes some treatment services better at adopting to change, and delivering more effective treatment. Still, the mechanisms which underpin the relationships between ORC and the process of innovation adoption are poorly understood. The generalisability of studies using ORC measurements to substance misuse treatment services outside of the US is not yet fully established, and has not been explored in an Irish setting (Kelly et al., 2017).

In Ireland, reporting and monitoring of policy, practice and treatment of problem drug use has been increasingly standardised through the European Monitoring Centre on Drugs and Drug Addiction (EMCDDA, 2019a). This supports and encourages the use of evidence- based policies and practices. However, historically the evolution of substance misuse services in Ireland has also been influenced by ideological elements such as the Catholic Church, a symbiosis of public and private medicine, and a political response which over the course of several decades which has attempted to account for rapidly changing societal values (Clancy et al., 2019, Barrington, 1987). As a modern European democracy, Ireland has expressed a clear commitment to implementing evidence based policies and practices in drug treatment (Department of Health, 2017a). In spite of this, Irelands rates of problem opiate use and drug related deaths are amongst the highest in Europe (EMCDDA, 2019a, Health Research Board, 2019). Training in evidence-based practices are provided in Irish OST services but scientifically based evidence on the characteristics of services which most effectively support innovation adoption in the context of Irish OST services is not available. If we wish to base the design of services, and the delivery of training within those services on scientific evidence, then it is imperative that this evidence is accumulated on not just *if* treatment services adopt new innovations, but *how* and *why* they do it (Lehman et al., 2012a).

Within the process of innovation adoption, training exposure frequently represents the first stage of a process and the individual and collective appraisal of that training, its value, and their appraisal of organisational context in which they work will influence staffs decision to implement it or not (Joe et al., 2007). The objective of this study was to identify and understand relationships and between ORC, staff characteristics, and the process of innovation adoption in Irish community-based OST services. This study sought to measure an individual's exposure to and conceptualisation of training, how it might have influenced their knowledge and beliefs, and their appraisal of individual and organisational efficacy with regard to implementation. These are all factors which are considered to be important in sustained adoption (Damschroder et al., 2009). The relationships between staff characteristics, such as levels of education, job tenure and professional background were also examined in relation to the process of innovation adoption.

A 4-stage interdependent process of innovation adoption; (i) training (e.g. exposure to new innovations), (ii) adoption of the new practice (representing a decision taken to adopt and/or to take action to adopt), (iii) implementation (sustained support for the change effort), and finally (iv) practice where the change becomes sustained in practice. This process, first proposed by Simpson (2002) and later refined by Lehman et al. (2011) provides a broad conceptual basis for this study. This study contributed to the literature on implementation research by examining the organisational determinants of innovation adoption and exploring the mechanisms which underpin them. Currently, these phenomena are not well understood and little is known about these in the Irish context (Lewis et al., 2020).

5.2 Research Design and Methodology

This quantitative study utilised a cross-sectional survey design which has been identified as a suitable approach for evaluating services (Das-Munshi et al., 2020). Data for this study comes from a convenience sample of staff who work in 'tier-3' community-based OST services in the Republic of Ireland. While there is no standard 'model' for these OST services in Ireland, they were typically staffed by multi-disciplinary teams which included, general assistants, therapists, nurses, project workers, and medical staff including general practitioner (GP) prescribers or specialist addiction psychiatrists. OST services were considered as separate entities when they operated from different buildings only. Staff who were over 18, had direct contact with service users and had worked or volunteered in individual OST services for more than 14 hours a week for a period no less than one month were considered eligible for the study. Services were selected at random, firstly service managers were contacted directly, and in all cases the researcher emailed the service teams and met with them in person, prior to commencing data collection. Participants were then recruited in person by one researcher in their places of work and completed a written questionnaire. Data was collected between June 2019 and February 2020.

5.2.1 Study Instruments

A modified version of the Survey of Organisational Functioning (SOF) developed by Broome et al. (2007) which is a superset of the ORC questionnaire developed by Lehman et al. (2002) was used for this study. The Organisational Readiness to Change (ORC) questionnaire includes 4 domains; Motivation for change [change drivers] (MFC), institutional resources (IR), staff attributes (SA) and organisational climate (OC) which incorporate a total of 18 subdomains (see Figure 1). The SOF instrument includes additional sub-domains on job attitudes, leadership,

workplace practices, and training exposure and utilization. In order to meet the objectives of this study, only the SOF measures on training exposure and utilization was incorporated into the staff questionnaire.

The sub-domains utilized in the training domains measure previous training experiences and utilization of training from both an individual and organisational perspective. These measures incorporate 14 items incorporating a total of four subscales: (i) training exposure (frequency of internal/external training opportunities) (ii) training satisfaction (with training and opportunities to train) (iii) individual training utilization (decision to use training, integration into practice, service user responsiveness to new techniques) (iv) service wide training utilization (management support for training, decision to implement, service level adoption). These scales have been shown to have reliable psychometric properties (Lehman et al., 2012b, Joe et al., 2007). Demographic data about participants' background and service characteristics were also included. There were a total of 115 items, 107 of which used Likert scale (1-5) responses [1=disagree strongly, 2=disagree, 3= uncertain, 4= agree, 5= strongly agree]. Ten items on the training subscales also used (1-5) Likert responses with a 5-point response format [1=never, 2= rarely,3=sometimes, 4= a lot, 5= almost always], with five items on training exposure using the 5-point response format; [none, 1 time, 2 times, 3 times, 4 or more]. When computing the scale [sub-domain] scores, items on the scale were averaged and multiplied by ten, meaning the possible range of scores was from 10 to 50. This process was used where over half of the number of items within a sub-domain were completed, otherwise the sub-domain was excluded (Lehman et al., 2002). In the Motivation for change domain (Figure 5.1) scales for training needs and programme needs indicate the need for greater training resources or improvements to specific aspects of the programme. Higher scores in

these areas reflect *negatively* on a service. Similarly, *higher* ratings on the stress scale indicate that there is *higher* stress in a service. In all the remaining sub-domains, higher staff ratings reflect *positively* on a service, for example high scores on training scales indicate that staff perceive training to be a priority in their respective services. Prior to full implementation, this tool was subject to minor modifications which included a change of spelling from American to British English and minor changes to the wording of questions to suit the Irish context. For example, the word 'program' was changed to 'service' and 'counsellor' was changed to 'keyworker'. This was then reviewed 8 subject experts (See **Error! Reference source not found.**) and a pilot study was c onducted (n=4) (Hertzog, 2008).

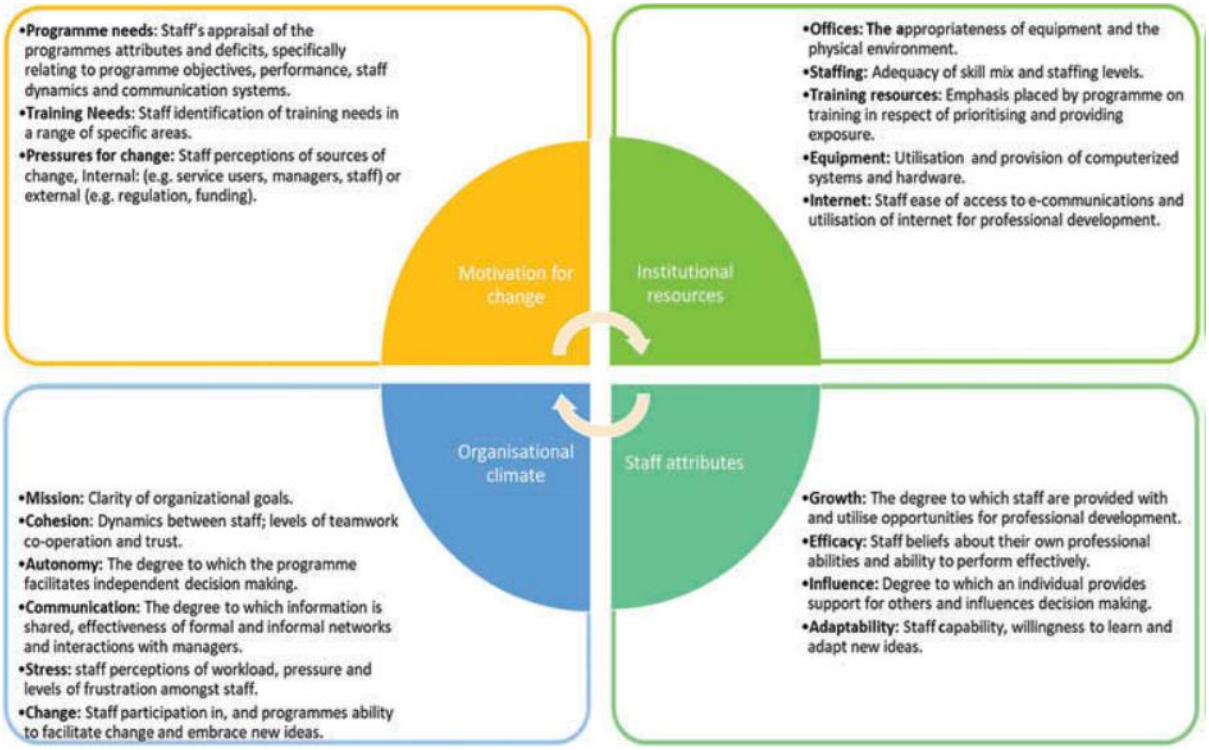


Figure 5. 1 ORC scales, subdomains and what they measure (Kelly, 2018)

5.2.2 Ethical issues

The study was approved by two ethics committees in Ireland. Written permission to access services was also obtained from the Health Service Executive (HSE) Clinical Ethics committee, the head of research for The HSE and managers of individual services. In most services, the researcher attended a staff meeting and emailed all staff details about the study several weeks prior to commencing data collection. The services were then visited on a pre-arranged date and the researcher spent an average of 2-3 days at each site. Participants were provided information verbally about the study prior to taking part, they were informed that their participation was voluntary, and they were given the opportunity to ask any questions about the study. As the survey was anonymous, consent was implied through participation and individual centres were identified only using a code. The surveys took 20-25 mins to complete and once they were completed, surveys were returned to the researcher in a sealed envelope.

5.2.3 Data Analysis

Data generated from the survey was entered directly into IBM SPSS statistics (Version 26.0, IBM Corp, Armonk, NY, USA) and then exported into Stata (Version 15.1, Statacorp LP, College Station, TX, USA) where statistical analysis was performed. For the ORC and training scales, Cronbach's alpha coefficient and the mean inter-item correlation coefficient were used to evaluate the internal consistency of the subdomains. An alpha value of >0.7 (Bland and Altman, 1997) and a mean inter-item correlation between 0.15 and 0.50 (Clark and Watson, 2016) were considered acceptable. Continuous variables were described using mean and standard deviation (SD) and categorical variables were described using frequency and percentage. Univariable and multivariable mixed-effects linear regression models with OST service as the random effect were

used to investigate organisational and staff factors associated with training exposure, satisfaction and individual and service wide utilisation. The multivariable models were built in three stages: (1) Model 1: staff demographic variables; (2) Model 2: ORC variables and (3) Model 3 (final model, presented as multivariate results): variables with a p-value <0.25 in Models 1-2 were included [see Table 5. 7]. Prior to performing the multivariable analysis, multicollinearity among the independent variables was tested using the variance inflation factor (VIF). All available data was used in the univariable analyses while the multivariable analysis was restricted to respondents with complete information (i.e. data on all independent and dependent variables investigated in the study). All tests were two-sided and a p-value of <0.05 was considered to be statistically significant.

5.3 Results

5.3.1 Demographics and Professional Characteristics

The twelve OST services sampled served a mixture of rural and urban populations and were staffed by multi-disciplinary teams. An overview of the respondent's characteristics is provided in Table 5. 1. Respondent's (n=132) were almost evenly split between females (50.8%) and males (48.5%) with one person identifying as other (0.8%) and a mean age of 46.8 years (SD 11.0). Professional backgrounds were varied with project workers/general assistants (30.5%) being in the majority, followed by counsellor/psychotherapists (19.9%), nursing (17.6%), medical (16.8%), administration (8.4%) and professional other which included pharmacists, social workers and psychologists (6.9%). In order to account for limited numbers in some professional groups and to facilitate analysis, the following professions were grouped together; Psychiatrists and GP's as *Medical;* Social Workers, Pharmacists and Psychologists as *Other Professional;* Addiction

Counsellor and Other Counsellor as *Counsellor Psychotherapist;* Nurse and Specialist Nurse as *Nursing;* Project Worker and Other (where other was specified as a General Assistant) were specified as *Project Worker/General Assistant;* and Administration remained unchanged. Most participants (70.8%) worked in the field for over 5 years, and over half (59.4%) were in their current role for over 5 years. Apart from medical staff who ran clinics to which individuals were generally assigned, staff surveyed were generally not assigned to a specific caseload of service users and the majority (59.2%) worked directly with 40 or more service users. The majority of the sample (85.3%) was educated from degree level and above, with those having school qualifications only (13.2%) or no school qualifications (1.6%) being in the minority. Ethnically, the sample group was largely homogenous with a large majority being White Irish (n=118), followed by other white background (n=7) with the remainder being Asian (n=3), Black African (n=1), Asian Chinese (n=1) and other (n=1).

Table 5. 1 Characteristics of Service Staff

	n	(%)
Discipline/Profession (n=131)		
Project Worker/General Assistant	40	(30.5)
Counsellor/Psychotherapist	26	(19.9)
Nursing	23	(17.6)
Medical	22	(16.8)
Administration	11	(8.4)
Professional other	9	(6.9)
Years experience working in substance misuse treatment (n=130)		
Under 6 months	7	(5.4)
6-11 months	4	(3.1)
1 to 3 years	16	(12.3)
4 to 5 years	11	(8.5)
Over 5 years	92	(70.8)
Years in current job (n=128)		
Under 6 months	8	(6.3)
6-11 months	6	(4.7)

	n	(%)
1 to 3 years	25	(19.5)
4 to 5 years	13	(10.2)
Over 5 years	76	(59.4)
Number of service users working with directly (n=120)		
1-10	7	(5.8)
11-20	20	(16.7)
21-30	13	(10.8)
31-39	9	(7.5)
40 or more	71	(59.2)
Works with (n=132)		
Both drug and alcohol users	114	(86.4)
Drug Users only	13	(9.8)
Alcohol Users only	5	(3.8)
Age (years): mean (SD)	46.8	(11.0)
Gender (n=132)		
Female	67	(50.8)
Male	64	(48.5)
Other	1	(0.8)
Ethnicity (n=131)		
Irish	118	(90.1)
Any other white background	7	(5.3)
Any other Asian background	3	(2.3)
Black African	1	(0.8)
Asian Chinese	1	(0.8)
Other (including mixed background)	1	(0.8)
Highest level of education (n=129)		
No school qualifications	2	(1.6)
Inter Cert/Junior Cert or equivalent (second-level mid-point state exams)	6	(4.7)
Leaving Cert/ Senior Cert or equivalent (second-level final state exams)	11	(8.5)
Degree or equivalent	76	(58.9)
Masters	29	(22.5)
PhD	5	(3.9)

n=number; %=percentage

Table 5. 2 provides an overview of ORC and training scale sub-domains with Cronbach's-alpha, mean inter-item correlation, mean scores (range 0-50) and standard deviations. It was evident that the e-communication and office resources subdomains did not have acceptable reliability. This

may have occurred as some items in the Institutional Resources domain related to group counselling and not all of the services surveyed facilitated group counselling. Similarly, some staff groups, such as project workers/general assistants may not have had direct access to the internet at work.

Table 5. 2 Reliability and descriptive Statistics, means and standard deviations for the ORC subdomains

Subdomains	Number of items	Cronbach's alpha	Mean inter-item correlation	n	Mean*	SD
Motivation for change						
Program Needs	8	0.84	0.39	131	34.2**	7.6
Training Needs	8	0.87	0.47	129	32.0**	8.5
Pressure for Change	7	0.72	0.27	128	32.8**	6.4
Institutional Resources						
Office Resources	4	0.36	0.12	132	34.5	6.6
Staff Resources	6	0.63	0.23	131	32.7	6.3
Training Resources	4	0.68	0.36	131	28.4	8.5
Computer Access	7	0.60	0.19	131	32.2	6.3
E-Communication	4	0.34	0.19	131	34.0	6.4
Staff Attributes						
Growth	5	0.72	0.34	131	32.2	7.6
Efficacy	5	0.55	0.21	132	37.9	5.3
Influence	6	0.77	0.36	130	35.0	6.4
Adaptability	4	0.56	0.25	130	37.8	5.3
Organisational Climate						
Mission	5	0.80	0.46	132	33.9	7.7
Cohesion	6	0.87	0.55	131	36.8	8.3
Autonomy	5	0.61	0.24	131	33.2	6.3
Communication	5	0.83	0.48	132	31.7	8.6
Stress	4	0.75	0.43	131	30.6**	8.1
Openness to change	5	0.73	0.35	130	30.4	7.2
Training Exposure and Utilisation						
Training Satisfaction	2	0.85	0.74	127	29.2	11.4
Training Exposure	5	0.77	0.40	131	22.0	8.2
Training Utilisation - individual level	4	0.81	0.51	122	30.8	8.1
Training Utilisation - program level	3	0.85	0.65	126	27.3	8.7

*Possible range of mean 10-50; **Higher scores in these domains may reflect negatively on a service, higher scores otherwise reflect positively on a service; n=number, SD=standard deviation

5.3.2 Results; process of training adoption

The results of the univariable and multivariable analyses investigating organisational and staff factors associated with training exposure, satisfaction and utilisation are presented in Tables Table 5. 4 to Table 5. 6., while the 3-stage modelling for multivariate analysis is presented in Table 5. 7 to Table 5. 10. Years of experience working in substance misuse and the communication sub-domain were excluded from all multivariable analyses due to multicollinearity. Years' experience working in substance misuse was highly correlated with years in current job and the communication sub-domain was highly correlated with the change sub-domain. Due to this, only the variables years in current job and change were investigated in the multivariable analysis. For consistency, all multivariable analysis was restricted to the n=102 who completed information on all independent and dependent variables investigated.

Table 5. 3 summarises the results for training exposure. Staff with the lowest level of education (secondary school or lower) had significantly lower training scores than staff with a degree or equivalent (p=0.027) or staff with a Masters/PhD (p=0.005). Project workers/General assistants had significantly lower training scores than all other disciplines except for administration staff. Administration staff had significantly lower training scores than counsellor/psychotherapists (p=0.026). In the univariable analysis fourteen out of eighteen subdomains were associated with training exposure. Six out of six subdomains in organisational climate were associated with training exposure, followed by institutional resources with four out of five, staff attributes with three out of four and motivation for change with one out of three. Highest level of education (p=0.018) and Discipline/Profession (p<0.001) were the staff demographics associated with training exposure. In the multivariable analysis, two of the ORC sub-domains training resources

(p=0.001) and growth (p=0.001) remained statistically significant. In services where staff perceived there to be better training resources (p=0.001) and more opportunities for growth (p=0.001) they also perceived that there was greater training exposure. Discipline/Profession (p=0.029) also remained statistically significant. Project worker/general assistants were less likely to be exposed to training than counsellor/psychotherapists (p=0.009), other professionals (p=0.029) and nurses (p=0.026). Years in current job (p=0.039) became significant in the multivariable analysis. Overall, longer job tenure was associated with greater training exposure, with those in post over five years having greater exposure than those in post five years or less.

Table 5. 3 Relationship between staff characteristics, ORC, training exposure; Univariable and Multivariable analysis

		Univariable Analysis			**Multivariable Analysis (n=102)**		
	n	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Highest level of education	128			0.018			
Secondary level or lower (reference)	19	0					
Degree or equivalent	76	4.06	(0.45 to 7.66)				
Masters/PhD	33	5.76	(1.75 to 9.77)				
Discipline/Profession	130			<0.001			0.029
Counsellor Psychotherapist (reference)	25	0			0		
Project worker/General Assistant	40	-8.23	(-12.00 to -4.47)		-4.86	(-8.52 to -1.20)	
Professional other	9	-0.69	(-6.10 to 4.73)		0.70	(-4.34 to 5.74)	
Medical	22	-3.95	(-8.05 to 0.14)		-2.92	(-6.49 to 0.65)	
Nursing	23	-2.42	(-6.44 to 1.59)		-0.61	(-4.66 to 3.43)	
Administration	11	-5.57	(-10.46 to -0.67)		-5.16	(-10.45 to 0.12)	
Years' experience working in substance misuse treatment	129			0.464			
≤ 5 years (reference)	38	0					
>5 years	91	1.08	(-1.81 to 3.96)				
Years in current job	127			0.101			0.039
≤ 5 years (reference)	51	0			0		
>5 years	76	2.26	(-0.44 to 4.97)		2.57	(0.14 to 5.01)	
Number of service users working with directly	119			0.816			
<40 (reference)	48	0					

		Univariable Analysis			Multivariable Analysis (n=102)		
	n	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
≥40	71	0.33	(-2.47 to 3.14)				
ORC Domains/subdomains							
Motivation for change							
Program Needs	130	-0.19	(-0.38 to -0.01)	0.036			
Training Needs	128	-0.12	(-0.28 to 0.04)	0.142			
Pressure for Change	127	0.16	(-0.05 to 0.37)	0.136			
Institutional Resources							
Office Resources	131	0.23	(0.02 to 0.44)	0.028			
Staff Resources	130	0.33	(0.11 to 0.55)	0.003			
Training Resources	130	0.49	(0.35 to 0.63)	<0.001	0.32	(0.15 to 0.49)	<0.001
Computer Access	130	0.13	(-0.08 to 0.34)	0.223	-0.15	(-0.35 to 0.04)	0.128
E-Communication	130	0.30	(0.10 to 0.51)	0.003			
Staff Attributes							
Growth	130	0.56	(0.41 to 0.70)	<0.001	0.34	(0.13 to 0.55)	0.001
Efficacy	131	0.42	(0.18 to 0.65)	0.001			
Influence	129	0.50	(0.31 to 0.70)	<0.001			
Adaptability	129	0.19	(-0.07 to 0.44)	0.149	0.08	(-0.16 to 0.31)	0.535
Organisational Climate							
Mission	131	0.32	(0.15 to 0.49)	<0.001			
Cohesion	130	0.20	(0.02 to 0.37)	0.026			
Autonomy	130	0.58	(0.38 to 0.78)	<0.001			
Communication	131	0.46	(0.31 to 0.60)	<0.001			
Stress	130	-0.21	(-0.38 to -0.04)	0.018			
Openness to change	129	0.63	(0.47 to 0.79)	<0.001			

n=number; %=percentage; CI=Confidence Interval

Table 5. 4 provides an overview of the univariable and multivariable linear regression analysis investigating organisational factors associated with training satisfaction. No staff characteristics were associated with training satisfaction in either sets of analysis. In the univariable analysis, thirteen out of eighteen subdomains were associated with training exposure. Six of the subdomains in organisational climate were associated with training satisfaction, five in institutional resources and three in staff attributes, with no sub-domains in the motivation for change domain showing any association. Two of the institutional resources subdomains, training resources (p=0.001) and computer access (p=0.007) showed significance. In organisations where staff perceived that there was better training resources and better computer access, they also reported higher satisfaction

with training. In the efficacy subdomain staff are asked to rate their skill levels, organisational ability and confidence. Staff who appraised themselves more favourably in this regard (p=0.040). reported that they were less satisfied with the training that they received. This is a finding which is worthy of further investigation.

Table 5. 4 Relationship between staff characteristics, ORC, training satisfaction; univariable and multivariable analysis

		Univariable Analysis			**Multivariable Analysis (n=102)**		
	n	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Highest level of education	124			0.433			
Secondary level or lower (reference)	18	0					
Degree or equivalent	72	1.28	(-4.07 to 6.62)				
Masters/PhD	34	3.52	(-2.34 to 9.37)				
Discipline/Profession	126			0.414			0.078
Counsellor Psychotherapist (reference)	26	0			0		
Project worker/General Assistant	38	-2.67	(-8.09 to 2.75)		2.19	(-1.59 to 5.98)	
Professional other	9	3.77	(-3.87 to 11.41)		8.42	(3.01 to 13.84)	
Medical	22	0.14	(-5.66 to 5.93)		2.12	(-1.98 to 6.23)	
Nursing	21	-3.22	(-9.08 to 2.63)		0.86	(-3.34 to 5.07)	
Administration	10	0.98	(-6.13 to 8.09)		1.64	(-3.92 to 7.20)	
Years' experience working in substance misuse treatment	125			0.629			
≤ 5 years (reference)	37	0					
>5 years	88	0.95	(-2.90 to 4.80)				
Years in current job	123			0.298			
≤ 5 years (reference)	51	0					
>5 years	72	1.88	(-1.66 to 5.42)				
Number of service users working with directly	116			0.562			
<40 (reference)	46	0					
≥40	70	1.13	(-2.68 to 4.94)				
ORC Domains/subdomains							
Motivation for change							
Program Needs	126	-0.23	(-0.47 to 0.02)	0.070			
Training Needs	125	-0.06	(-0.28 to 0.15)	0.561			
Pressure for Change	124	0.07	(-0.22 to 0.36)	0.633			
Institutional Resources							
Office Resources	127	0.47	(0.19 to 0.74)	0.001			
Staff Resources	126	0.68	(0.39 to 0.96)	<0.001			

		Univariable Analysis			Multivariable Analysis (n=102)		
	n	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Training Resources	126	0.94	(0.79 to 1.10)	<0.001	0.95	(0.77 to 1.13)	<0.001
Computer Access	126	0.49	(0.22 to 0.76)	<0.001	0.31	(0.09 to 0.54)	0.007
E-Communication	126	0.44	(0.17 to 0.71)	0.001			
Staff Attributes							
Growth	126	0.70	(0.49 to 0.91)	<0.001			
Efficacy	127	0.43	(0.11 to 0.75)	0.009	-0.32	(-0.62 to -0.01)	0.040
Influence	126	0.51	(0.24 to 0.78)	<0.001			
Adaptability	126	0.12	(-0.22 to 0.45)	0.502			
Organisational Climate							
Mission	127	0.59	(0.38 to 0.81)	<0.001			
Cohesion	126	0.36	(0.12 to 0.60)	0.003			
Autonomy	126	0.73	(0.42 to 1.04)	<0.001			
Communication	127	0.66	(0.46 to 0.85)	<0.001			
Stress	126	-0.53	(-0.75 to -0.31)	<0.001			
Change	125	0.83	(0.61 to 1.06)	<0.001			

n=number; %=percentage; CI=Confidence Interval

Table 5. 5 summarises the univariable and multivariable linear regression analysis that investigated which organisational factors were associated with an individual's decision to adopt techniques learned in training into their own practice. In the univariable analysis, twelve out of eighteen ORC subdomains were associated with individual adoption, with staff attributes having four out of four domains, institutional resources four out of five, organisational climate four out of six, and with no subdomains from the motivation for change domain reaching statistical significance. Staff who were educated at secondary level or lower were less likely to utilise training than staff with a degree or equivalent (p=0.021) or staff with a masters (p=0.007). Counsellor psychotherapists reported higher training utilisation when compared to project workers/general assistants (p=0.001), medical staff (p=0.050) and nursing staff (p=0.019). Medical staff had higher training utilisation when compared to project worker/general assistants (p=0.049). In the multivariable analysis, five of the eighteen ORC subdomains were statistically significant. In the motivation for change domain, staff who rated their programmes as having greater pressures for change reported lower

training utilisation (p=0.036). In the institutional resources domain, two sub-domains were significant, with those rating staff resources (p=0.005) and access to e-communication (p=0.005) more highly, reporting greater individual training utilisation. Where staff who perceived having more opportunities for growth (p=0.001) and greater influence (p=0.001) they reported being more likely to adopt training into practice. Finally, an unexpected result was that those who saw their services as having clearer mission goals, also reported that they were least likely to adopt new practices learned in training (p=0.049).

Table 5. 5 Relationship between staff characteristics, ORC, Training Utilisation (Individual Level); Univariable and Multivariable analysis

		Univariable Analysis			**Multivariable Analysis (n=102)**		
	n	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Highest level of education	119			0.023			0.779
Secondary level or lower (reference)	17	0			0		
Degree or equivalent	71	4.50	(0.68 to 8.33)		-0.50	(-4.03 to 3.04)	
Masters/PhD	31	5.89	(1.60 to 10.17)		0.50	(-3.89 to 4.90)	
Discipline/Profession	121			0.005			0.123
Counsellor Psychotherapist (reference)	26	0			0		
Project worker/General Assistant	37	-7.79	(-11.56 to -4.02)		-1.67	(-4.95 to 1.61)	
Professional other	9	-4.58	(-9.94 to 0.77)		-7.05	(-11.86 to -2.23)	
Medical	21	-4.08	(-8.16 to 0.00)		-3.16	(-6.54 to 0.22)	
Nursing	21	-4.82	(-8.86 to -0.79)		-1.97	(-5.43 to 1.49)	
Administration	7	-3.78	(-9.53 to 1.97)		-0.68	(-5.45 to 4.09)	
Years' experience working in substance misuse treatment	121			0.264			
≤ 5 years (reference)	34	0					
>5 years	87	1.66	(-1.25 to 4.56)				
Years in current job	119			0.388			
≤ 5 years (reference)	48	0					
>5 years	71	1.18	(-1.49 to 3.85)				
Number of service users working with directly	115			0.326			
<40 (reference)	46	0					
≥40	69	-1.42	(-4.25 to 1.41)				
ORC Domains/subdomains							

		Univariable Analysis			Multivariable Analysis (n=102)		
	n	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Motivation for change							
Program Needs	121	-0.10	(-0.28 to 0.07)	0.255			
Training Needs	121	-0.17	(-0.33 to -0.02)	0.025	0.07	(-0.08 to 0.22)	0.336
Pressure for Change	120	-0.05	(-0.26 to 0.17)	0.657	-0.19	(-0.37 to 0.01)	0.036
Institutional Resources							
Office Resources	122	0.22	(0.02 to 0.43)	0.035			
Staff Resources	121	0.42	(0.20 to 0.63)	<0.001	0.32	(0.09 to 0.54)	0.005
Training Resources	121	0.37	(0.21 to 0.53)	<0.001	0.13	(-0.04 to 0.31)	0.135
Computer Access	121	0.13	(-0.09 to 0.34)	0.244	-0.19	(-0.40 to 0.02)	0.082
E-Communication	121	0.36	(0.16 to 0.56)	<0.001	0.26	(0.08 to 0.44)	0.005
Staff Attributes							
Growth	121	0.60	(0.45 to 0.75)	<0.001	0.38	(0.17 to 0.59)	<0.001
Efficacy	122	0.57	(0.34 to 0.80)	<0.001	0.26	(-0.01 to 0.54)	0.059
Influence	121	0.60	(0.41 to 0.79)	<0.001	0.42	(0.21 to 0.63)	<0.001
Adaptability	121	0.38	(0.13 to 0.63)	0.003			
Organisational Climate							
Mission	122	0.21	(0.04 to 0.38)	0.017	-0.20	(-0.41 to 0.00)	0.049
Cohesion	121	0.11	(-0.07 to 0.29)	0.233	-0.15	(-0.31 to 0.02)	0.088
Autonomy	121	0.42	(0.19 to 0.65)	<0.001	0.17	(-0.05 to 0.39)	0.136
Communication	122	0.34	(0.18 to 0.49)	<0.001			
Stress	121	-0.15	(-0.33 to 0.02)	0.091	-0.23	(-0.50 to 0.04)	0.100
Change	120	0.47	(0.29 to 0.66)	<0.001			

n=number; %=percentage; CI=Confidence Interval

Table 5. 6 summarises the results for training utilisation at the service level. In the univariable analysis fourteen out of eighteen ORC subdomains were associated with programme wide adoption of new training techniques. In organisational climate six out of six domains were significant, three out of four in staff attributes, three out of five in institutional resources and programmes with greater identified training needs and programme needs in the motivation for change domain being seeing as less capable of adopting new techniques. Staff with lower levels of education (secondary or lower) reported lower levels of training utilisation at service level than staff with a degree (p=0.004) or masters/PhD (p=0.557). Project workers/general assistants reported significantly lower training utilisation at the service level than counsellor/psychotherapists (p=0.002), medical staff (p=0.018) and nursing staff (p=0.012). In the

multivariable analysis 4 out of 18 ORC domains were statistically significant. In the motivation for change domain, programmes with high programme needs (p=0.019) were negatively associated with service wide adoption. In the staff attributes domain, having greater influence (p=0.001) and lower stress (p=0.003) related greater service wide adoption of training. Where staff reported greater team cohesion in the organisational climate domain, they reported lower service level adoption (p=0.001). This result is unexpected and may have occurred if staff perceived a team as being their immediate co-workers, as opposed to the wider organisation.

Table 5. 6 Relationship between staff characteristics, ORC and Training utilisation (Service level); Univariable and Multivariable analysis

		Univariable Analysis			**Multivariable Analysis (n=102)**		
	n	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Highest level of education	123			0.007			0.689
Secondary level or lower (reference)	17	0			0		
Degree or equivalent	73	6.08	(1.93 to 10.23)		-1.03	(-4.83 to 2.76)	
Masters/PhD	33	7.06	(2.46 to 11.67)		0.11	(-4.60 to 4.82)	
Discipline/Profession	125			0.031			0.216
Counsellor Psychotherapist (reference)	26	0			0		
Project worker/General Assistant	38	-6.50	(-10.61 to -2.39)		-2.59	(-5.90 to 0.71)	
Professional other	9	-2.93	(-8.81 to 2.94)		-5.57	(-10.83 to -0.31)	
Medical	21	-1.62	(-6.09 to 2.85)		-1.38	(-4.84 to 2.08)	
Nursing	23	-1.38	(-5.72 to 2.96)		-0.09	(-3.81 to 3.63)	
Administration	8	-2.72	(-8.73 to 3.30)		-3.49	(-8.56 to 1.58)	
Years' experience working in substance misuse treatment	124			0.605			
≤ 5 years (reference)	36	0					
>5 years	88	-0.82	(-3.91 to 2.28)				
Years in current job	122			0.645			
≤ 5 years (reference)	50	0					
>5 years	72	-0.68	(-3.59 to 2.22)				
Number of service users working with directly	117			0.829			
<40 (reference)	47	0					
≥40	70	-0.34	(-3.42 to 2.74)				
ORC Domains/subdomains							

		Univariable Analysis			Multivariable Analysis (n=102)		
	n	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Motivation for change							
Program Needs	125	-0.30	(-0.49 to -0.12)	0.001	-0.20	(-0.37 to -0.03)	0.019
Training Needs	124	-0.19	(-0.36 to -0.03)	0.024			
Pressure for Change	123	0.05	(-0.18 to 0.27)	0.680			
Institutional Resources							
Office Resources	126	0.21	(-0.01 to 0.44)	0.064	-0.11	(-0.32 to 0.10)	0.302
Staff Resources	125	0.40	(0.17 to 0.63)	0.001	0.18	(-0.05 to 0.42)	0.120
Training Resources	125	0.55	(0.41 to 0.70)	<0.001	0.15	(-0.04 to 0.33)	0.121
Computer Access	125	0.19	(-0.03 to 0.41)	0.097			
E-Communication	125	0.40	(0.19 to 0.60)	<0.001	0.13	(-0.04 to 0.31)	0.140
Staff Attributes							
Growth	125	0.58	(0.41 to 0.74)	<0.001			
Efficacy	126	0.38	(0.12 to 0.64)	0.005			
Influence	124	0.57	(0.37 to 0.78)	<0.001	0.48	(0.27 to 0.69)	<0.001
Adaptability	125	0.20	(-0.07 to 0.46)	0.143			
Organisational Climate							
Mission	126	0.48	(0.31 to 0.65)	<0.001	0.13	(-0.10 to 0.35)	0.263
Cohesion	125	0.20	(0.01 to 0.38)	0.041	-0.31	(-0.49 to -0.13)	0.001
Autonomy	125	0.45	(0.21 to 0.70)	<0.001			
Communication	126	0.56	(0.41 to 0.71)	<0.001	-0.31		
Stress	125	-0.34	(-0.52 to -0.16)	<0.001	0.25	(-0.52 to -0.10)	0.003
Change	124	0.78	(0.62 to 0.94)	<0.001	0.16	(-0.02 to 0.53)	0.074

n=number; %=percentage; CI=Confidence Interval

5.4 Discussion

The objectives of this study were to examine staff and organisational factors which relate to the process of training adoption in Irish community-based OST services. Accepting for some low alpha values which require further investigation, this study provides further confirmation of the utility of ORC measurements outside of the U.S. context (Rampazzo et al., 2006). ORC tools developed at the TCU https://ibr.tcu.edu/forms/organizational-staff-assessments/ have been used in at least 20 papers but heterogeneity in study designs complicates the cross comparison of results. Additionally, exactly how to address ORC deficits once they have been identified is still not clear (Kelly et al., 2018, Kelly et al., 2017). A method of providing baseline measurements on ORC

results directly to services and staff with a view to stimulating organisational improvement provides some promise in this regards (Courtney et al., 2007).

5.5.1 Staff Characteristics associated with the process of training adoption

Certain staff characteristics were associated with the process of training adoption. Staff from specific professional groups who are more highly educated and longer in post, were more likely to be exposed to training on a regular basis. This may be partly attributed to the mandatory requirements for continuous professional development for certain professional groups, but these factors were not the only determinants of training utilisation. Staff with higher levels of education were more likely to make a decision to adopt new practices, a finding which is consistent with other studies (Lundgren et al., 2011b). Certain staff disciplines, such as counsellors, reported that they were more likely to adopt new practices and also reported greater service wide adoption. One possible explanation for this may be that within Irish OST services, counsellor/therapists have regular supervision built into their conditions of employment. This is a practice which has been shown to directly benefit the implementation of learning, as well as employee wellbeing and reduce burnout (O'Connor et al., 2018, Wheeler and Richards, 2007). Staff reporting higher stress levels identified lower service level adoption of training. All participants in this study had direct contact with service users, and the implications of these differences between staff groups, such as lower levels of training exposure and utilisation amongst frontline staff such as administration, project workers and general assistants on the consistency of service delivery, are worthy of consideration.

5.5.2 ORC domains and subdomains associated with the process of training adoption

Staff attributes within the ORC subscales, such as having greater opportunities for growth and having greater influence with peers, were also important factors within the adoption process. These findings are generally consistent with studies conducted in the United States treatment services, where staff who saw themselves as having greater influence with their peers and having more professional growth opportunities were also more likely to support evidence-based practice (Lundgren et al., 2013, Courtney et al., 2007). This finding is also consistent with studies conducted in private and public sector environments where employee empowerment has been shown to relate to greater employee commitment, performance, and willingness to innovate (Fernandez and Moldogaziev, 2013). Within substance misuse services, training adoption may not the only benefit of staff empowerment, as services where there are more staff who saw themselves as having greater influence are also more effective at developing better relationships with service users (Greener et al., 2007). Feeling influential has also been shown to have negative implications. Staff who are longer in post and who see themselves as having greater influence have also been shown to make more personal modifications to evidence-based practices (Lundgren et al., 2013). Overall, the impact of having more opinion leaders and finding ways to engage and empower staff who do not feel influential is an important consideration for planners and change agents. Another finding from this study which may have implications relating to for training type or design, is that staff who rated themselves as having greater efficacy, i.e. better skillsets, reported that they had lower training satisfaction overall.

Training was less likely to be adopted into practice in services with higher pressures for change and greater service needs, confirming the relationship between programme deficits and a services

ability to adopt new ideas. Unsurprisingly, providing greater training resources means that staff will have higher training exposure and greater satisfaction with training. As training is increasingly accessed remotely and online, having greater access to computers and e-communications is important in terms of increasing frequency of access to and variability of training known as e-learning (Sinclair et al., 2016). While there is a known variability in respect of the impact of e-learning on behaviour change in healthcare subject to factors such as the type of training being delivered, its efficacy is well established (Rohwer et al., 2017, Sinclair et al., 2016). For this study, staff reporting great computer access reported high levels of satisfaction with training while greater use of and access to e-communication was strongly related to an individual decision to adopt training. These findings are also consistent with those from other studies which use the ORC tool (Lehman et al., 2012a, Simpson and Flynn, 2007). Staffing was another resource which was shown to have a relationship with an individual's decision to adopt training into practice. While the relationship between staffing levels and implementation within healthcare is known (Li et al., 2018) this finding provides further insight into the mechanisms which may be involved in this relationship, something about which little is known. Two unexpected results emerged from this study. One was that in services where staff reported higher levels of cohesion, lower levels of service wide adoption of training was reported. One possible explanation for this is that different teams may work cohesively but in 'silos' or as separate entities within the same organisations. The reasons why staff reporting greater mission clarity in their services and lower levels of individual training adoption are not clear.

5.6 Limitations

Although a three-stage modelling process was utilised in order to mitigate the challenges in conducting multivariable analysis with a relatively small sample size and a large number of variables, caution is recommended in making extrapolations from these results for this reason. Sample size and differences between the sizes of samples from each service also restricted opportunities for cross comparison of services. The staff participants also represent a convenience sample and non-response or self-selection may have been affected by workloads or staff characteristics, in addition to this measures of training adoption were self-reported. As this is an exploratory cross-sectional study it cannot be used as a basis to identify causal relationships between the selected variables. Other studies using ORC measurements have shown that service aspects such as service; location, size, affiliation to a university or a more detailed analysis staff characteristics have shown an impact on service functionality and training adoption (Crits-Christoph et al., 2011, Lehman et al., 2012a). Assessing all these variables was limited given the small population of staff working in Irish addictions services and the requisite to maintain the anonymity of services involved in this study.

5.7 Conclusion

Based on the findings in this study, we can conclude that that both staff and organisational characteristics are predictive of the success of training adoption in community OST services in Ireland. Providing training alone is important but it is not sufficient in itself to ensure that training will be adopted into practice. In the context of high rates of failure to adopt to change in healthcare, it is imperative that staff attributes and staff perceptions of how their organisations work are considered. Disparities between staff and the impact of skill mix and staff assessment of their own

skillsets on training adoption are worthy of further exploration, but also should be considered when recruiting new staff. Funders must not only provide sufficient resources for services, but the right *type* of resources. Yet, providing additional resources alone is not sufficient, and identifying ways to empower staff and make them feel more influential in their workplaces will facilitate the process of training adoption and is likely to involve other benefits for services. Overall, organisational characteristics should be carefully considered when planning services or prior to change implementation and the ORC tool developed by Lehman and colleagues (2002) provides a good basis on which to do this. This study, and other studies using these ORC measurements in substance misuse services, provide a good basis for further longitudinal, quasi-experimental or mixed methods research in substance misuse treatment services. These will help to enhance our knowledge of *how* services work.

Table 5. 7 3-Stage model Multivariable linear regression analysis investigating factors associated with training exposure

	Model 1				Model 2				Model 3		
	Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value
Demographic variables											
Highest level of education			0.948								
Secondary level or lower (reference)	0										
Degree or equivalent	0.73	(-3.67 to 5.13)									
Masters/PhD	0.66	(-4.78 to 6.10)									
Qualification status			0.641								
Not qualified or accredited in addiction (reference)	0										
Qualified - not accredited	-0.13	(-4.93 to 4.67)									
Currently qualified and accredited	-1.51	(-4.93 to 1.92)									
Discipline/Profession			0.002								0.029
Counsellor Psychotherapist (reference)	0								0		
Project worker	-9.11	(-13.31 to -4.90)							-4.86	(-8.52 to -1.20)	
Professional other	-1.62	(-8.18 to 4.93)							0.70	(-4.34 to 5.74)	
Medical	-4.14	(-8.31 to 0.04)							-2.92	(-6.49 to 0.65)	
Nursing	-4.20	(-8.87 to 0.47)							-0.61	(-4.66 to 3.43)	
Administration	-7.31	(-13.93 to -0.69)							-5.16	(-10.45 to 0.12)	
Years in current job			0.103								0.039
≤ 5 years (reference)	0								0		
>5 years	2.39	(-0.48 to 5.26)							2.57	(0.14 to 5.01)	
ORC variables											
Motivation for change											
Program Needs					-0.06	(-0.27 to 0.14)	0.548				
Training Needs					-0.02	(-0.21 to 0.18)	0.852				
Pressure for Change					0.01	(-0.20 to 0.23)	0.896				
Resources											
Office Resources					-0.12	(-0.36 to 0.12)	0.311				
Staff Resources					0.12	(-0.15 to 0.40)	0.384				

	Model 1				Model 2				Model 3		
	Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value
Training Resources					0.23	(0.01 to 0.44)	0.043			(0.15 to 0.49)	<0.001
Computer Access					-0.16	(-0.41 to 0.10)	0.223			(-0.35 to 0.04)	0.128
E-Communication					0.07	(-0.14 to 0.28)	0.518				
Staff Attributes											
Growth					0.38	(0.12 to 0.64)	0.004			(0.13 to 0.55)	0.001
Efficacy					-0.05	(-0.40 to 0.29)	0.768				
Influence					0.00	(-0.28 to 0.28)	0.987				
Adaptability					0.17	(-0.11 to 0.46)	0.239			(-0.16 to 0.31)	0.535
Organisational Climate											
Mission					-0.10	(-0.37 to 0.16)	0.438				
Cohesion					-0.06	(-0.27 to 0.14)	0.545				
Autonomy					0.15	(-0.11 to 0.40)	0.254				
Stress					-0.10	(-0.34 to 0.14)	0.405				
Change					0.16	(-0.18 to 0.50)	0.362				

n=number; %=percentage; CI=Confidence Interval

Table 5. 8 Multivariable linear regression analysis investigating factors associated with Training Satisfaction

	Model 1				Model 2				Model 3		
	Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value
Demographic variables											
Highest level of education			0.727								
Secondary level or lower (reference)	0										
Degree or equivalent	0.32	(-5.51 to 6.16)									
Masters/PhD	-1.84	(-9.02 to 5.35)									
Qualification status			0.281								
Not qualified or accredited in addiction (reference)	0										
Qualified - not accredited	5.08	(-1.31 to 11.48)									
Currently qualified and accredited	2.35	(-2.18 to 6.88)									
Discipline/Profession			0.067								0.078
Counsellor Psychotherapist (reference)	0								0		

	Model 1				Model 2				Model 3		
	Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value
Project worker	-1.44	(-7.04 to 4.16)							2.19	(-1.59 to 5.98)	
Professional other	9.90	(1.27 to 18.52)							8.42	(3.01 to 13.84)	
Medical	1.82	(-3.72 to 7.36)							2.12	(-1.98 to 6.23)	
Nursing	-4.22	(-10.40 to 1.95)							0.86	(-3.34 to 5.07)	
Administration	0.56	(-8.15 to 9.26)							1.64	(-3.92 to 7.20)	
Years in current job			0.751								
≤ 5 years (reference)	0										
>5 years	-0.62	(-4.42 to 3.19)									
ORC variables											
Motivation for change											
Program Needs					-0.02	(-0.24 to 0.21)	0.894				
Training Needs					0.05	(-0.16 to 0.25)	0.644				
Pressure for Change					-0.05	(-0.28 to 0.19)	0.693				
Resources											
Office Resources					-0.10	(-0.35 to 0.16)	0.452				
Staff Resources					0.09	(-0.21 to 0.38)	0.571				
Training Resources					0.95	(0.72 to 1.18)	<0.001				<0.001
Computer Access					0.26	(-0.02 to 0.53)	0.067				0.007
E-Communication					0.12	(-0.10 to 0.35)	0.276				
Staff Attributes											
Growth					0.13	(-0.14 to 0.41)	0.351				
Efficacy					-0.29	(-0.65 to 0.08)	0.122				0.040
Influence					0.09	(-0.21 to 0.39)	0.564				
Adaptability					-0.14	(-0.45 to 0.16)	0.361				
Organisational Climate											
Mission					-0.14	(-0.42 to 0.14)	0.330				
Cohesion					-0.02	(-0.24 to 0.21)	0.875				
Autonomy					0.03	(-0.25 to 0.30)	0.853				
Stress					-0.08	(-0.34 to 0.18)	0.532				
Change					-0.05	(-0.41 to 0.32)	0.805				

n=number; %=percentage; CI=Confidence Interval

Table 5. 9 Multivariable linear regression analysis investigating factors associated with training utilisation- individual level

	Model 1				Model 2				Model 3		
	Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value
Demographic variables											
Highest level of education			0.138								0.779
Secondary level or lower (reference)	0								0		
Degree or equivalent	3.50	(-1.01 to 8.00)							-0.50	(-4.03 to 3.04)	
Masters/PhD	5.62	(0.05 to 11.18)							0.50	(-3.89 to 4.90)	
Qualification status			0.906								
Not qualified or accredited in addiction (reference)	0										
Qualified - not accredited	1.12	(-3.81 to 6.04)									
Currently qualified and accredited	0.37	(-3.13 to 3.88)									
Discipline/Profession			0.030								0.123
Counsellor Psychotherapist (reference)	0								0		
Project worker	-6.36	(-10.67 to -2.04)							-1.67	(-4.95 to 1.61)	
Professional other	-8.05	(-14.74 to -1.35)							-7.05	(-11.86 to -2.23)	
Medical	-4.70	(-8.98 to -0.43)							-3.16	(-6.54 to 0.22)	
Nursing	-5.30	(-10.08 to -0.53)							-1.97	(-5.43 to 1.49)	
Administration	-1.98	(-8.74 to 4.78)							-0.68	(-5.45 to 4.09)	
Years in current job			0.613								
≤ 5 years (reference)	0										
>5 years	0.76	(-2.18 to 3.69)									
ORC variables											
Motivation for change											
Program Needs					-0.09	(-0.26 to 0.09)	0.326				
Training Needs					0.10	(-0.06 to 0.26)	0.215		0.07	(-0.08 to 0.22)	0.336
Pressure for Change					-0.17	(-0.36 to 0.02)	0.074		-0.19	(-0.37 to -0.01)	0.036
Resources											
Office Resources					0.05	(-0.15 to 0.26)	0.594				
Staff Resources					0.34	(0.10 to 0.58)	0.006		0.32	(0.09 to 0.54)	0.005

	Model 1				Model 2				Model 3		
	Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value
Training Resources					0.14	(-0.05 to 0.33)	0.138		0.13	(-0.04 to 0.31)	0.135
Computer Access					-0.15	(-0.37 to 0.06)	0.167		-0.19	(-0.40 to 0.02)	0.082
E-Communication					0.22	(0.05 to 0.40)	0.013		0.26	(0.08 to 0.44)	0.005
Staff Attributes											
Growth					0.41	(0.19 to 0.62)	<0.001		0.38	(0.17 to 0.59)	<0.001
Efficacy					0.29	(0.00 to 0.58)	0.047		0.26	(-0.01 to 0.54)	0.059
Influence					0.38	(0.15 to 0.62)	0.001		0.42	(0.21 to 0.63)	<0.001
Adaptability					0.04	(-0.20 to 0.28)	0.756				
Organisational Climate											
Mission					-0.15	(-0.37 to 0.07)	0.189		-0.20	(-0.41 to 0.00)	0.049
Cohesion					-0.15	(-0.33 to 0.03)	0.094		-0.15	(-0.31 to 0.02)	0.088
Autonomy					0.16	(-0.07 to 0.38)	0.168		0.17	(-0.05 to 0.39)	0.136
Stress					0.10	(-0.11 to 0.31)	0.357				
Change					-0.26	(-0.55 to 0.03)	0.074		-0.23	(-0.50 to 0.04)	0.100

n=number; %=percentage; CI=Confidence Interval

Table 5. 10 Multivariable linear regression analysis investigating factors associated with Training utilisation-programme level

	Model 1				Model 2				Model 3		
	Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value
Demographic variables											
Highest level of education			0.227								0.689
Secondary level or lower (reference)	0								0		
Degree or equivalent	2.81	(-2.20 to 7.82)							-1.03	(-4.83 to 2.76)	
Masters/PhD	5.42	(-0.76 to 11.61)							0.11	(-4.60 to 4.82)	
Qualification status			0.925								
Not qualified or accredited in addiction (reference)	0										
Qualified - not accredited	0.46	(-5.01 to 5.92)									
Currently qualified and accredited	-0.48	(-4.38 to 3.41)									
Discipline/Profession			0.222								0.216
Counsellor Psychotherapist (reference)	0								0		

	Model 1				Model 2				Model 3		
	Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value		Coefficient	(95% CI)	p-value
Project worker	-6.18	(-10.97 to -1.40)							-2.59	(-5.90 to 0.71)	
Professional other	-5.53	(-12.98 to 1.93)							-5.57	(-10.83 to -0.31)	
Medical	-2.95	(-7.70 to 1.80)							-1.38	(-4.84 to 2.08)	
Nursing	-3.47	(-8.78 to 1.84)							-0.09	(-3.81 to 3.63)	
Administration	-3.82	(-11.35 to 3.72)							-3.49	(-8.56 to 1.58)	
Years in current job			0.412								
≤ 5 years (reference)	0										
>5 years	-1.36	(-4.63 to 1.90)									
ORC variables											
Motivation for change											
Program Needs					-0.21	(-0.39 to -0.03)	0.025		-0.20	(-0.37 to -0.03)	0.019
Training Needs					0.03	(-0.14 to 0.20)	0.765				
Pressure for Change					0.06	(-0.13 to 0.26)	0.517				
Resources											
Office Resources					-0.13	(-0.34 to 0.09)	0.241		-0.11	(-0.32 to 0.10)	0.302
Staff Resources					0.18	(-0.07 to 0.42)	0.167		0.18	(-0.05 to 0.42)	0.120
Training Resources					0.18	(-0.01 to 0.38)	0.067		0.15	(-0.04 to 0.33)	0.121
Computer Access					-0.10	(-0.33 to 0.13)	0.390				
E-Communication					0.19	(0.00 to 0.37)	0.049		0.13	(-0.04 to 0.31)	0.140
Staff Attributes											
Growth					0.11	(-0.12 to 0.34)	0.343				
Efficacy					-0.06	(-0.37 to 0.24)	0.680				
Influence					0.48	(0.23 to 0.73)	<0.001		0.48	(0.27 to 0.69)	<0.001
Adaptability					-0.03	(-0.29 to 0.23)	0.818				
Organisational Climate											
Mission					0.16	(-0.08 to 0.39)	0.193		0.13	(-0.10 to 0.35)	0.263
Cohesion					-0.31	(-0.50 to -0.12)	0.001		-0.31	(-0.49 to -0.13)	0.001
Autonomy					-0.02	(-0.25 to 0.21)	0.872				
Stress					-0.30	(-0.52 to -0.09)	0.006		-0.31	(-0.52 to -0.10)	0.003
Change					0.19	(-0.12 to 0.49)	0.225		0.25	(-0.02 to 0.53)	0.074

n=number; %=percentage; CI=Confidence Interval

Chapter 6: Organisational attributes and client engagement in community opiate substitute prescribing service's[13]

6.1 Introduction

This chapter will describe a cross-sectional study conducted in Irish community opiate prescribing services which explored the relationship between staff perceptions of organisational readiness to change and client engagement. Contextual information will be provided, and this will provide justification for this study. The methodological approach will be described in detail prior to presentation of the results which will be presented in tables and accompanied by a brief written description. Finally, the results will be critically discussed, study strengths and limitations will be described before providing a conclusion, which will provide an overview of the findings and briefly discuss future directions for further research.

There are an estimated 1.3 million people who are dependent on opiates in Europe and in terms of impact, opiate users make a disproportionate contribution to the health and social care costs attributed to managing drug use (EMCDDA, 2019b, Godfrey et al., 2004). In Europe, Ireland has amongst the highest number of people who are dependent on opiates per capita, and amongst the highest rates of drug related deaths in Europe, most of which have involved the use of opiates (EMCDDA, 2019c). It is well established that the provision of treatment, specifically opiate substitution therapy in combination with psycho-social support, reduces drug related deaths and improves other health outcomes for people who are dependent on opiates, and provides economic

[13] KELLY, P., HEGARTY J., DYER KR., O DONOVAN A., 2021b. Organizational attributes and client engagement in community opiate substitute prescribing services. Cork, Ireland: University College Cork. [Under review; *Journal of Substance Abuse Treatment*]

benefits for the societies in which they live (Gossop, 2014, Farrell and Barry, 2010, Comiskey et al., 2009).

In this context, and when compared to other European countries, it is reported that Ireland has above average treatment 'coverage', with over half of those who are dependent on opiates in active substitution treatment, with two thirds of these being treated in specialist clinics (EMCDDA, 2019b, Health Research Board, 2018). Comparatively, Ireland also spends a higher proportion of its overall drugs budget on treatment than supply reduction, a factor which it has been argued, should reduce the overall harms caused by drugs (EMCDDA, 2019b, Nutt, 2012, Babor et al., 2010). In spite of this, it is anticipated that the pattern of increasing numbers of drug related deaths in Ireland since the early 2000's is likely to continue, and the reasons why almost half of population who are dependent on opiates do not access treatment, remain unclear (Health Research Board, 2019).

It is widely recognized that the harms which are caused by drug use are not confined to drug use alone, but also relate to the social context in which they are used. These harms can be increased or decreased by the policy response which includes the provision, or not, of appropriate treatment (Babor et al., 2010). If the increasing trend in drug related deaths and other consequences are to be reversed globally, then a greater understanding of the factors which contribute to the adverse impacts of drug use, including treatment delivery factors or *how* treatment is delivered, is required.

In the European context, regions in the UK also have particularly high rates of opiate dependence and have seen increasing rates of drug related deaths in excess of that which has been seen in

Ireland (Lynn and Lyons, 2016, Office for National Statistics, 2016). One possible explanation for this is that in the UK, despite numerous public protestations, the introduction of competitive tendering in England and Wales in the mid 2000's saw the traditional statutory workforce 're-commissioned' and replaced with non-statutory organisations with a lower number of specialist and professional staff, including specialist prescribers (Drummond, 2017). The impact of this, arguably the biggest change to treatment configuration since the 'British system' was established, on drug related deaths and other outcomes, has never been adequately measured. A report commissioned by Public Health England (2016) into increases in drug related deaths was inconclusive, identifying a range of factors such as population characteristics and increased drug potency contributed to increased deaths. This report offered some acknowledgement of the relationship between treatment delivery factors and outcomes such as drug related deaths, but it is notable that the absence of sufficient data on these relationships could not have supported any conclusive findings 'for or against', even if treatment delivery factors were the single focus of the report. No similar exploration of drug related harms, at least publicly, has taken place in the Irish context.

Within substance misuse treatment, there is a dearth of research that clearly identifies what type of organisational systems or specific components, can support the development of effective treatment (Van de Ven et al., 2020). Traditionally, research related to the effectiveness of public health interventions across healthcare have focused on categorical factors or disease states and not the organisations and their process's (Bauer et al., 2015, Cioffi et al., 2004). While there are some exceptions to this, the relationship between service characteristics and client outcomes remains largely unexplored, particularly outside of the US (Kelly et al., 2018). This may have occurred

because of this type of research is complex, there is a lack of standardized frameworks for the configuration and evaluation of organisations, and because there are fewer career incentives for this 'type' of research in academic settings (Bauer et al., 2015, Broome et al., 2007).

In practice, it is clear that substance misuse treatment is delivered within a complex socio-economic and political 'eco-system'. This complexity is reflected in work over the course of several decades, where several attempts have been made to understand treatment delivery from a systemic perspective, but little of this work has been operationalized in practice (Roche et al., 2013, Ghose, 2008, Simpson and Dansereau, 2007a). While we know that some treatment organisations are better than others at delivering treatment, our understanding '*why'* and '*how'* this occurs is limited. To develop targeted and effective policy responses aimed at improving organisations, it is important to understand which aspects of organisational structures and treatment processes are better than others (Van de Ven et al., 2020, Simpson, 2009). Understanding and measuring the factors at the organisational level where *'policy meets people'* is crucial if we are to design and deliver policies which will result in effective treatment for clients.

Reflective of the international context, in Irish prescribing organisations, there has been some useful analysis of the factors which make opiate substitution therapy (OST) more successful, but this has focused principally on client characteristics or specific interventions (Cousins et al., 2017, Darker et al., 2015, Mullen et al., 2012). Still, retaining and engaging clients in opiate substitution treatment is thought to be of particular importance for health outcomes, and retention in treatment is considered an acceptable proxy outcome (Mullen et al., 2012). This is reflected across a range

of healthcare settings, where the ability of an organisation to engage clients has been identified as imperative for ensuring positive health outcomes (Barello et al., 2012).

Conceptually, client engagement incorporates a co-constructed process between the healthcare organisation, its workers, and the client. This process is also thought to be influenced by the internal client state (Bright et al., 2015). The internal client state is thought to be measurable through assessing client behaviors, such as increased participation in treatment (Dixon et al., 2016). Engagement here is considered to be a therapeutic 'dyad', as opposed to something which is solely influenced by the clients internal state. This is thought to more accurately reflect reality, and from a healthcare perspective this interpretation is thought to be more useful in terms of supporting engagement (Dixon et al., 2016). If engagement falters, this should act as a prompt to the policy maker, organisation or health care practitioner to reflect on their own approach, and not just to attribute failures solely to the client, or their characteristics.

In respect of gaining a greater understanding of the determinants of this organisational-client 'dyad', studies conducted principally in the United States, which have utilized the concept of organisational readiness to change (ORC) as a measure of organisational functioning and how this relates to client engagement, show some promise (Broome et al., 2007). Theoretically, ORC is a shared psychological construct between staff based on their organisational appraisal and relates to how *willing* and *able* they are to respond to change, which does not exclude changing needs of clients (Weiner, 2009). In practice, organisational level characteristics such as resources, specific attributes of staff and aspects of organisational functioning such as communication, staff autonomy, levels of stress and mission clarity have all been shown to have a relationship with a

treatment organisations ability to enhance therapeutic relationships, increase levels of support amongst peers, increase satisfaction with treatment, and improve client engagement (Kelly et al., 2018). Although little is known about their determinants, these *'relational'* indicators have been shown to relate to better attendance and improved treatment outcomes such as reduced drug use and criminal activity (Meier et al., 2005, Joe et al., 2001). There is currently no existing data in the Irish context and little in the European context which attempts to ascertain which organisational-level factors make some treatment organisations better than others at engaging or retaining clients.

6.2 Method

The aim of this multi-site cross sectional study was to identify and understand how client characteristics and staff perceptions of ORC related to client engagement in Irish community-based OST organisations. A convenience sample of staff and clients who work in or access community OST organisations in The Republic of Ireland was chosen for this study. Seven urban and five rural organisations were included in the study. The design and composition of these organisations in Ireland is decided at a local level and, operationally at least, these organisations are heterogeneous. For the most part however, organisations are staffed by multi-disciplinary teams which may include counsellors, General Practitioners (GP) prescribers or addiction psychiatrists, nurses, general assistants and drug workers, social workers and psychologists.

There are differences between rural and urban organisations in terms of on-site dispensing of OST, availability of prescribers and opening times and days. Some organisations operate from community primary care facilities, others from recommissioned mental health organisations on hospital grounds, with a minority of organisations operating from purpose-built buildings. Clients

typically attended their clinics on a weekly basis with some clients having two weekly attendance which was either on an appointment or 'drop-in' basis, depending on the organisation. For this study, clients were asked to identify which professional they considered to be their keyworker or if they were not assigned a keyworker, which professional they saw the most often. Information on length of time in treatment, sex, sexual orientation, housing and family circumstances was also collected. Clients were asked to specify the length of time they had been in treatment during this treatment episode.

6.2.2 Subject recruitment

Data were collected between June 2019 and March 2020. For this study, clients were considered eligible if they were over 18 and had been in treatment for 28 days or more in the previous three months. Participants were recruited in person by one researcher in a clinical setting and participants were asked to complete a written questionnaire. Staff who had worked or volunteered for over 14 hours a week for a period of one month or more and who had direct contact with clients, were considered eligible. The researcher remained present with the client while they completed the questionnaire in order to assist with literacy or issues around comprehension before the client returned the questionnaire in a sealed envelope while staff questionnaires were completed in their place of work and returned in a sealed envelope.

6.2.3 Study Instruments

Client engagement was measured using the engagement scales only from the Client Evaluation of Self and Treatment (CEST) tool (Joe et al., 2002). The engagement tool includes 36 items and four subdomains measuring; (i) Treatment participation (degree of participation and benefits derived

from one-to-one meetings with staff) (ii) Treatment satisfaction (organisational accessibility, organisation and expectations for client) (iii) Counselling Rapport (evaluation of relationship with keyworker; trust, empathy, treatment objectives) (iv) Peer support (degree to which client values support from other clients). These scales have been shown to have reliable psychometric properties (Greener et al., 2007). Staff perceptions of ORC were measured using a shortened version of the Survey of Organisational Functioning (SOF) tool, which is a superset of the ORC tool, originally developed by Lehman et al. (2002). This ORC tool includes 107 items 4 domains; (i) Motivation for change [change drivers] (ii) Institutional Resources (iii) Staff attributes and (iv) Organisational Climate and 18 sub-domains. Demographic data about participants background was also included, with demographic variables for clients modelled on the Irish standard reporting system for treatment organisations. Instruments used in this study were subject to minor modifications for use of language in the Irish context, for example terms such as *program* and were substituted with *service* and *counsellor* substituted with *keyworker* and spellings were adjusted from US to UK English. The client questionnaires were then cross checked for ease of comprehension using the National Adult Literacy Agency guidelines (National Adult Literacy Agency, 2008). Instruments were also reviewed by eight subject experts for face validity and a pilot study for staff (n=4) and clients was conducted (n=6) (Hertzog, 2008).

Within both the client and staff questionnaire, all items used Likert scale (1-5) responses [1=disagree strongly, 2=disagree, 3= uncertain, 4= agree, 5= strongly agree]. When computing the scale [sub-domain] scores, items on the scale were averaged and multiplied by ten, meaning the possible range of scores was from 10 to 50. This process was used where over half of the number of items within a sub-domain were completed, otherwise the score for the sub-domain was not

calculated for that individual (Lehman et al., 2002). Higher scores in all of the client engagement sub-domains reflected more *positively* on the levels of support provided within an organisation. In most ORC sub-domains a higher score reflects *positively* on a organisation, however in the motivation for change domain higher scores reflect *negatively* on the organisation, similarly higher scores for stress in the Organisational Climate domain also reflect *negatively* on an organisation.

6.2.4 Ethical issues

This study obtained ethical approval prior to obtaining written permission to access organisations from the Health Services Executive (HSE) Clinical Ethics Committee, the head of research for the HSE and from individual organisation managers. Ethical approval was granted on the basis that any published data would not facilitate the identification of services. Prior to commencing data collection, all organisations were sent an email for dissemination to staff outlining the purpose of the project. In almost all cases, the researcher attended a staff meeting several weeks in advance of data collection to answer questions about the project, and to request that staff inform clients about the project. Organisations were then visited on a pre-arranged date and the researcher spent 2-3 days at each site. Participants were informed about the study prior to taking part using an information leaflet and they were also given an opportunity to ask questions about the study. To ensure anonymity, completed surveys were coded with only the researcher having access to the identifying codes. Consent was implied through participation as the survey was anonymous. Client questionnaires typically took 5-10 minutes to complete, while the staff questionnaires took 20-25 minutes and completed questionnaires were placed in a sealed envelope and returned to the researcher.

6.2.5 Statistical analysis

Data generated from the survey were entered directly into IBM SPSS statistics (Version 26.0, IBM Corp, Armonk, NY, USA) and then exported into Stata (Version 15.1, Statacorp LP, College Station, TX, USA) where statistical analysis was performed. For the ORC and engagement scales, Cronbach's alpha coefficient and the mean inter-item correlation coefficient were used to evaluate the internal consistency of the subdomains. An alpha value of >0.7 (Bland and Altman, 1997) and a mean inter-item correlation between 0.15 and 0.50 (Clark and Watson, 2016) were considered acceptable. Continuous variables were described using mean and standard deviation (SD) and categorical variables were described using frequency and percentage.

Univariable and multivariable mixed-effects linear regression models with OST organisation as the random effect were used to investigate organisational and individual factors associated with the client engagement scales. The individual-level variables were the client characteristic's and the organisation-level (organisational level) variables were the mean (across staff within the organisation) ORC sub-domain scores. For each dependent variable, all independent variables with $p<0.25$ in the univariable analysis were eligible for inclusion in the multivariable analysis. Prior to performing the multivariable analysis, multicollinearity among the independent variables was tested using the variance inflation factor (VIF). All available data was used in the univariable analyses while the multivariable analysis was restricted to respondents with complete information for that model (i.e. data available on the dependent variable and all independent and dependent variables included in that model). All tests were two-sided and a p-value of <0.05 was considered to be statistically significant.

6.3 Results

6.3.1 Client demographics and characteristics

The sample (n=262) was mostly Irish, unemployed, male, heterosexual and most people lived with others in stable accommodation, with the median length of time in treatment being two years. For ease of comprehension the length to time in treatment was split into quartiles (1) 1-8 months (2) 9-24 months (3) 25-72 months (4) 73-336 months. An overview of client demographics and characteristics collected in the survey is provided in Table 6. 1

Table 6. 1 Summary table for service user demographics and characteristics (n=262)[a]

	n	(%)
Primary worker (n=250)		
Doctor	162	(65)
Counsellor	33	(13)
Nurse	25	(10)
Other	30	(12)
Sex (n=261)		
Male	176	(67)
Female	85	(33)
Sexual orientation (n=258)		
Heterosexual	238	(92)
Homosexual	7	(3)
Bi-sexual	7	(3)
Do not wish to answer	6	(2)
Where living (n=260)		
Stable accommodation	207	(80)
Homeless	42	(16)
Prison Institution	7	(3)
Not known	4	(1)
Living with whom (n=256)		
Parents/Family	93	(36)
Alone	52	(20)
Partner and Children	30	(12)
Partner (alone)	27	(11)

	n	(%)
Alone and Children	14	(6)
Friends	2	(1)
Not Known	38	(14)
Number of children (n=249): range	0 to 9	
Median (IQR)	1	(0-2)
Age (years), n=260: range	18 to 70	
mean(SD)	37	(8.5)
Length of time in treatment (months), n=226: median (IQR)	24.0	(8 to 72)
Highest level of education (n=258)		
Never went to school	1	(0.4)
Primary level incomplete	4	(1.6)
Primary level	83	(32.2)
Junior Cert	104	(40.3)
Leaving Cert	45	(17.4)
Third level	21	(8.1)
Age left Primary or Secondary School for the first time, n=257: median (IQR)	16	(14.5 to 17.0)
Employment status (n=261)		
Unemployed	191	(73.2)
In paid employment	46	(17.6)
Training Courses	9	(3.4)
Retired/Unable to work	6	(2.3)
Student	4	(1.5)
Housewife/husband	2	(0.8)
Other	3	(1.1)
Country of birth (n=261)		
Ireland	222	(85.1)
Other	39	(14.9)
Ethnic/Cultural background (n=261)		
Irish	234	(89.7)
Any other white background	19	(7.3)
Irish Traveller	3	(1.1)
Other (including mixed background)	2	(0.8)
Unknown	2	(0.8)
Black African	1	(0.4)
Speaks a language other than English at home (n=260)		
Yes	32	(12.3)
No	228	(87.7)
Main reason for referral		
Drugs	255	(97.3)

	n	(%)
Alcohol	5	(1.9)
Alcohol + Drugs + Concerned Person	1	(0.4)
Alcohol + Drug	1	(0.4)

[a]Unless otherwise stated; n=number; %=percentage

The reliability and descriptive statistics for the engagement sub-domains show that the engagement scales have acceptable internal consistency and reliability. For the treatment engagement sub-domains in Table 6. 2 mean scores indicate that clients rated the organisations that they attended favourably but it is notable that mean values for peer support are lower, indicating clients did not rate their peers as highly as staff in terms of being a source of support.

Table 6. 2 Reliability and descriptive statistics, means and standard deviations for the client engagement subscales

Subdomains	Number of items	Mean inter-item correlation	Cronbach's alpha	n	Mean[a]	SD
Treatment Participation	12	0.275	0.813	262	40.72	5.35
Treatment Satisfaction	7	0.329	0.759	262	40.77	6.52
Counseling Rapport	12	0.493	0.919	261	42.19	6.52
Peer Support	5	0.387	0.758	262	31.99	8.61

[a]Possible range of mean 10-50, higher mean scores equate to more favourable treatment engagement, n=number, SD=standard deviation

For the ORC scales (see Table 5. 2) it was evident that the e-communication and office resources within the ORC subdomains did not have acceptable reliability. It was thought that this may have occurred because some items in the Institutional Resources domain related to group counselling, and not all of the organisations surveyed facilitated group counselling. When items relating to group counselling were removed, Cronbach's alpha was 0.205 and mean inter-item correlation was 0.083, which did not improve reliability of the sub-domain. Similarly, some staff professions

or groups, may not have had direct access to the internet at work but as this was at an individual level, and not organisation level, it was decided not to remove items to re-assess reliability ratings.

6.3.2 Individual level variables, staff perceptions of ORC and client engagement; univariable and multivariable analysis

The results of the univariable and multivariable analyses investigating the relationship between individual and organisational characteristics and engagement are presented in Table 6. 3 to Table 6. 5. Univariable results for individual characteristics and organisation-level variables are presented in Table 6. 3 and Table 6. 4, while summaries of the multivariable results are presented in Table 6. 5 Not all ORC variables with a p-value <0.25 were included in the multivariable analysis due to collinearity between some variables.

A summary of univariable analyses of the relationship between individual level variables is provided in Table 6. 3. Clients with a counsellor as their primary worker had significantly higher treatment participation scores than clients with doctors (p=0.007) or client with 'other' as their primary worker (p=0.025). Clients with a counsellor as their primary worker also reported having significantly higher rapport than those who identified a doctor as being their primary worker (p=0.001) or those who identified 'other' as their primary worker (p=0.006). Clients living in stable accommodation also had significantly higher treatment participation scores (p=0.025). Treatment satisfaction differed by length of time in treatment (p=0.037). Clients who were in treatment for the longest length of time (upper quartile: 73months to 336 months) had significantly lower treatment satisfaction, than all groups of clients who had been in treatment for less time. Female clients reported significantly higher counselling rapport than male clients (p=0.015). Educational

levels were important in terms of peer support ratings. Clients whose highest level of education was Junior Cert had significantly higher peer support scores than clients with a Leaving Cert education ($p=0.015$) or clients with a Third level education ($p=0.013$). Also, clients whose highest level of education was primary level or lower had significantly higher peer support scores than clients with a Third level education ($p=0.033$). Clients who left school when they were over 16 years of age had significantly lower peer support scores than clients who left school when they were 16 years or younger ($p=0.047$).

Table 6. 3 Relationship between individual level variables and service user ratings of treatment participation, treatment satisfaction, counselling rapport and peer support; univariable analysis

	Treatment Participation				Treatment Satisfaction				Counselling Rapport				Peer Support			
	n	Coefficient	(95% CI)	p-value	n	Coefficient	(95% CI)	p-value	n	Coefficient	(95% CI)	p-value	n	Coefficient	(95% CI)	p-value
Individual level variables																
Primary worker	250			0.016[a]	250			0.093	250			0.005[b]	250			0.130
Counsellor (reference)	33	0			33	0			33	0			33	0		
Nurse	25	-2.08	(-4.72 to 0.57)		25	-1.54	(-4.82 to 1.74)		25	-1.71	(-5.00 to 1.58)		25	-1.38	(-5.78 to 3.02)	
Doctor	162	-2.63	(-4.55 to -0.72)		162	-2.40	(-4.82 to 0.02)		162	-3.93	(-6.34 to -1.52)		162	-2.85	(-6.06 to 0.37)	
Other	30	-3.93	(-6.47 to -1.39)		30	-3.94	(-7.16 to -0.72)		30	-4.51	(-7.73 to -1.30)		30	-4.80	(-9.09 to -0.51)	
Age (years)	260	-0.02	(-0.09 to 0.06)	0.673	260	0.02	(-0.07 to 0.11)	0.654	259	0.05	(-0.04 to 0.14)	0.303	260	-0.01	(-0.13 to 0.11)	0.897
Length of time in treatment percentiles	226			0.066	226			0.037[a]	225			0.214	226			0.073
Quartile 1 (<1-8 months)	61	0			61	0			61	0			61	0		
Quartile 2 (9-24 months)	56	-0.16	(-2.05 to 1.74)		56	0.61	(-1.50 to 2.72)		56	1.18	(-1.13 to 3.48)		56	-0.94	(-3.92 to 2.04)	
Quartile 3 (25- 72 months)	59	1.58	(-0.30 to 3.46)		59	0.57	(-1.54 to 2.68)		59	2.30	(0.00 to 4.59)		59	-0.87	(-3.84 to 2.09)	
Quartile 4 (73 -336 months)	50	-1.07	(-3.04 to 0.90)		50	-2.32	(-4.54 to -0.11)		49	0.31	(-2.11 to 2.73)		50	-4.00	(-7.11 to -0.89)	
Sex	261			0.085	261			0.185	260			0.015[a]	261			0.369
Male (reference)	176	0			176	0			175	0			176	0		
Female	85	1.20	(-0.17 to 2.56)		85	1.05	(-0.50 to 2.61)		85	1.99	(0.38 to 3.59)		85	1.00	(-1.18 to 3.18)	
Heterosexual	252			0.555	252			0.065	252			0.145	252			0.513
No (reference)	14	0			14	0			14	0			14	0		
Yes	238	-0.83	(-3.58 to 1.92)		238	-3.04	(-6.27 to 0.18)		238	-2.38	(-5.59 to 0.82)		238	-1.50	(-6.01 to 3.00)	
Stable accommodation	256			0.025[a]	256			0.486	255			0.786	256			0.714
No (reference)	49	0			49	0			49	0			49	0		
Yes	207	1.88	(0.24 to 3.52)		207	0.66	(-1.20 to 2.53)		206	0.27	(-1.69 to 2.23)		207	-0.48	(-3.06 to 2.09)	

	Treatment Participation				Treatment Satisfaction				Counselling Rapport				Peer Support			
Lives with partner	218			0.267	218			0.528	217			0.599	218			0.094
No (reference)	161	0			161	0			161	0			161	0		
Yes	57	0.87	(-0.67 to 2.40)		57	0.59	(-1.24 to 2.42)		56	0.50	(-1.36 to 2.36)		57	2.13	(-0.36 to 4.61)	
Highest level of education	258			0.778	258			0.515	257			0.903	258			0.014[a]
Primary level or lower (reference)	88	0			88	0			87	0			88	0		
Junior Cert	104	-0.21	(-1.72 to 1.31)		104	-0.82	(-2.54 to 0.90)		104	-0.28	(-2.09 to 1.53)		104	0.61	(-1.76 to 2.99)	
Leaving Cert	45	0.19	(-1.71 to 2.09)		45	0.30	(-1.85 to 2.45)		45	-0.06	(-2.32 to 2.20)		45	-2.94	(-5.91 to 0.03)	
Third level	21	1.09	(-1.43 to 3.60)		21	-1.54	(-4.37 to 1.29)		21	-1.11	(-4.09 to 1.87)		21	-4.25	(-8.17 to -0.33)	
Age left school for first time (years)	257			0.573	257			0.410	256			0.916	257			0.047[a]
≤ 16 years (reference)	178	0			178	0			177	0			178	0		
>16 years	79	0.40	(-0.99 to 1.80)		79	-0.66	(-2.24 to 0.91)		79	-0.09	(-1.74 to 1.56)		79	-2.23	(-4.43 to -0.03)	
In paid employment	261			0.911	261			0.294	260			0.963	261			0.899
No (reference)	215	0			215	0			215	0			215	0		
Yes	46	-0.10	(-1.78 to 1.59)		46	-1.03	(-2.95 to 0.89)		45	0.05	(-1.97 to 2.07)		46	-0.17	(-2.86 to 2.52)	
Speaks a language other than English at home	260			0.398	260			0.745	259			0.506	260			0.409
No (reference)	228	0			228	0			227	0			228	0		
Yes	32	-0.85	(-2.83 to 1.13)		32	0.38	(-1.89 to 2.65)		32	-0.80	(-3.16 to 1.56)		32	1.32	(-1.81 to 4.45)	

[a] p<0.05 [b] p<0.01 [c] p<0.001

An overview of the univariable analysis of the relationship between organisational level variables as measured by staff perceptions of ORC, and client perspectives on treatment participation, treatment satisfaction, counselling rapport and peer support is provided in Table 6. 4. Four out of eighteen ORC subdomains had a statistically significant relationship with treatment participation; in organisations where there were higher ratings for e-communication ($p=0.043$), staff saw themselves as having greater efficacy ($p=0.029$), more influence ($p=0.020$), and greater autonomy ($p=0.001$) clients rated themselves as having greater treatment participation. Five out of eighteen sub-domains were associated with greater treatment satisfaction; in organisations where staff reported having greater efficacy ($p=0.008$) more influence ($p=0.042$), where they felt that they had more autonomy ($p<0.001$) and there was better communication ($p=0.020$) and more openness to change ($p=0.045$), clients also reported greater satisfaction with treatment. Only three ORC subdomains had a statistically significant relationship with counselling rapport; in organisations where staff reported that there was good access to e-communication ($p=0.039$), and where they saw themselves as having greater efficacy ($p=0.047$) and more autonomy ($p<0.001$), clients also reported having a stronger rapport with their primary workers. Finally, ORC sub-domains did not show any association with client's appraisal of peer support in the univariable analysis.

Table 6. 4 Summary table of relationship between staff ratings of ORC and treatment participation, treatment satisfaction, counselling rapport and peer support; univariable analysis

	Treatment participation (n=262)			**Treatment satisfaction (n=262)**			**Counselling Rapport (n=261)**			**Peer Support (n=262)**		
	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Organisation-level variables[x]												
ORC variables												
Motivation for change												
Program Needs	-0.06	(-0.27 to 0.16)	0.611	-0.20	(-0.60 to 0.19)	0.310	-0.09	(-0.44 to 0.26)	0.610	0.01	(-0.39 to 0.41)	0.961
Training Needs	-0.09	(-0.30 to 0.13)	0.437	-0.20	(-0.61 to 0.21)	0.340	-0.10	(-0.46 to 0.26)	0.600	-0.01	(-0.43 to 0.40)	0.953
Pressure for Change	-0.11	(-0.33 to 0.10)	0.310	-0.20	(-0.60 to 0.21)	0.345	-0.21	(-0.56 to 0.13)	0.222	0.22	(-0.17 to 0.60)	0.278
Resources												
Office Resources	0.05	(-0.22 to 0.32)	0.723	0.32	(-0.16 to 0.79)	0.197	0.06	(-0.38 to 0.51)	0.781	0.18	(-0.30 to 0.66)	0.454
Staff Resources	0.09	(-0.15 to 0.34)	0.452	0.34	(-0.09 to 0.76)	0.123	0.14	(-0.25 to 0.54)	0.472	0.03	(-0.44 to 0.49)	0.916
Training Resources	0.06	(-0.12 to 0.24)	0.543	0.23	(-0.08 to 0.55)	0.150	0.08	(-0.21 to 0.37)	0.594	0.17	(-0.17 to 0.50)	0.322
Computer Access	0.09	(-0.31 to 0.48)	0.673	-0.16	(-0.93 to 0.60)	0.679	0.05	(-0.61 to 0.71)	0.876	-0.35	(-1.06 to 0.37)	0.343
E-Communication	0.32	(0.01 to 0.64)	0.043	0.26	(-0.33 to 0.85)	0.392	0.51	(0.02 to 0.99)	0.039[a]	0.55	(-0.05 to 1.16)	0.074
Staff Attributes												
Growth	0.09	(-0.17 to 0.34)	0.503	0.25	(-0.21 to 0.70)	0.286	0.10	(-0.31 to 0.50)	0.640	0.17	(-0.30 to 0.64)	0.479
Efficacy	0.52	(0.05 to 0.99)	0.029[a]	1.17	(0.31 to 2.03)	0.008[b]	0.81	(0.01 to 1.62)	0.047[a]	0.61	(-0.41 to 1.62)	0.243
Influence	0.35	(0.05 to 0.65)	0.020[a]	0.61	(0.02 to 1.21)	0.042[a]	0.49	(-0.03 to 1.01)	0.063	0.43	(-0.22 to 1.08)	0.197
Adaptability	-0.01	(-0.42 to 0.41)	0.970	0.22	(-0.52 to 0.96)	0.561	0.03	(-0.62 to 0.69)	0.923	-0.20	(-0.96 to 0.56)	0.611
Organisational Climate												
Mission	0.13	(-0.11 to 0.36)	0.295	0.34	(-0.06 to 0.74)	0.092	0.18	(-0.20 to 0.55)	0.358	0.23	(-0.21 to 0.68)	0.307
Cohesion	0.07	(-0.10 to 0.24)	0.408	0.20	(-0.11 to 0.51)	0.204	0.13	(-0.15 to 0.40)	0.370	-0.03	(-0.35 to 0.29)	0.840
Autonomy	0.29	(0.12 to 0.47)	0.001[c]	0.68	(0.42 to 0.94)	<0.001[c]	0.50	(0.24 to 0.76)	<0.001[c]	0.39	(0.00 to 0.78)	0.053
Communication	0.16	(-0.01 to 0.32)	0.058	0.34	(0.05 to 0.62)	0.020[a]	0.24	(-0.03 to 0.50)	0.079	0.26	(-0.06 to 0.58)	0.113

	Treatment participation (n=262)			Treatment satisfaction (n=262)			Counselling Rapport (n=261)			Peer Support (n=262)		
Stress	-0.07	(-0.26 to 0.12)	0.493	-0.20	(-0.54 to 0.13)	0.232	-0.12	(-0.42 to 0.18)	0.430	-0.07	(-0.43 to 0.28)	0.689
Change	0.18	(-0.01 to 0.37)	0.061	0.35	(0.01 to 0.70)	0.045[a]	0.29	(-0.02 to 0.59)	0.065	0.20	(-0.20 to 0.59)	0.328

*Relationships were calculated at the organisational-level using the mean value for ORC sub-domains at each of the 12 OST organisations; [a] $p<0.05$ [b] $p<0.01$ [c] $p<0.001$

An overview of multivariable analysis of the relationship between individual level variables, organisational level variables, and the client engagement scales is provided in Table 6. 5. Clients who described themselves as living in stable accommodation had significantly higher treatment participation (p=0.009). No individual level variables were associated with Treatment satisfaction. Length of time in treatment was associated with counselling rapport (p=0.044) and peer support (p=0.023). Clients in the third quartile of length of time in treatment (25-72 months) had significantly higher counselling rapport scores than clients in the first quartile (1-8 months) (p=0.006). Clients in quartile 4 (73-336 months) had significantly lower peer support scores than clients from quartile 1 (1-8 months) (p=0.017) and clients who were in quartile 3 (25-72 months) (p=0.004). Highest level of education was also associated with peer support (p=0.002). Clients with higher levels of education were overall less likely to have high scores for peer support. Those who had completed their leaving certificate had significantly lower scores for peer support than clients with primary level education or lower (p=0.001) or those with junior certificate as their highest level of education (p=0.001). Clients with third level as their highest level of education had significantly lower peer support scores than those with primary education or lower (p=0.011) or those with junior cert as their highest level of education (p=0.037).

An overview of the multivariable analysis of the relationship between organisational level variables as measured by staff perceptions of ORC and client scores on all four of the engagement scales demonstrated that one organisational level variable only showed any association. In organisations where staff rated themselves as having higher levels of autonomy, the clients who attended these organisations had significantly higher levels of treatment participation (p=0.034),

treatment satisfaction (p=0.001) and counselling rapport (p=0.001). No organisational variables were associated with peer support in the multivariable analysis.

Table 6. 5 Relationship between individual level variables, organisational level variables, and service user ratings of treatment participation, treatment satisfaction, counselling rapport and peer support; multivariable analysis

	Treatment participation			**Treatment satisfaction**			**Counselling Rapport**			**Peer Support**		
	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Individual level variables												
Primary worker			0.260			0.140			0.099			0.194
Counsellor (reference)	0			0			0			0		
Nurse	-1.00	(-3.84 to 1.83)		-1.03	(-4.50 to 2.45)		-0.36	(-3.78 to 3.06)		-1.41	(-6.29 to 3.46)	
Doctor	-2.00	(-4.07 to 0.07)		-2.32	(-4.99 to 0.35)		-2.68	(-5.27 to -0.09)		-2.95	(-6.78 to 0.88)	
Other	-1.84	(-4.73 to 1.05)		-3.75	(-7.28 to -0.23)		-2.19	(-5.72 to 1.35)		-5.07	(-10.21 to 0.06)	
Length of time in treatment percentiles			0.051			0.059			0.044[a]			0.023[a]
Quartile 1 (<1-8 months)	0			0			0			0		
Quartile 2 (9-24 months)	-0.54	(-2.38 to 1.29)		0.77	(-1.47 to 3.01)		1.96	(-0.30 to 4.23)		-1.23	(-4.53 to 2.07)	
Quartile 3 (25- 72 months)	1.64	(-0.20 to 3.47)		0.49	(-1.73 to 2.70)		3.11	(0.88 to 5.34)		0.76	(-2.51 to 4.03)	
Quartile 4 (73 -336 months)	-0.81	(-2.76 to 1.14)		-2.19	(-4.52 to 0.14)		1.05	(-1.31 to 3.41)		-4.08	(-7.42 to -0.73)	
Sex			0.568			0.223			0.253			
Male (reference)	0			0			0					
Female	0.42	(-1.02 to 1.87)		1.10	(-0.67 to 2.86)		1.04	(-0.74 to 2.81)				
Heterosexual						0.264			0.509			
No (reference)				0			0					
Yes				-1.87	(-5.16 to 1.41)		-1.11	(-4.41 to 2.18))				
Stable accommodation			0.009[b]									
No (reference)	0											
Yes	2.34	(0.59 to 4.09)										
Lives with partner												0.203
No (reference)										0		
Yes										1.69	(-0.91 to 4.28)	
Highest level of education												0.002[b]
Junior Cert										-1.73	(-4.66 to 1.20)	
Leaving Cert										-8.48	(-12.82 to -4.13)	
Third level										-7.27	(-12.85 to -1.70)	
Age left school for first time (years)												0.069
≤ 16 years (reference)										0		
>16 years										3.46	(-0.27 to 7.19)	

	Treatment participation			Treatment satisfaction			Counselling Rapport			Peer Support		
	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value	Coefficient	(95% CI)	p-value
Organisation-level variables*												
ORC variables												
Motivation for change												
Pressure for Change							0.05	(-0.18 to 0.28)	0.685			
Resources												
Office Resources				0.28	(-0.05 to 0.61)	0.092						
Staff Resources				-0.21	(-0.57 to 0.15)	0.251						
Training Resources				-0.16	(-0.42 to 0.10)	0.238						
E-Communication	0.16	(-0.12 to 0.43)	0.271				0.16	(-0.20 to 0.52)	0.389	0.37	(-0.23 to 0.97)	0.223
Organisational Climate												
Autonomy	0.22	(0.02 to 0.42)	0.034[a]	0.71	(0.34 to 1.07)	<0.001[c]	0.48	(0.20 to 0.76)	0.001[c]	0.35	(-0.08 to 0.78)	0.114

*Relationships were calculated at the organisational-level using the mean value for ORC sub-domains at each of the 12 OST organisations; [a]p<0.05 [b]p<0.01 [c]p<0.001

6.4 Discussion

The findings confirm expectations that clients provide higher ratings for engagement, rapport and participation measures when they attend organisations with greater levels of functioning, as measured by the ORC instrument. These results provide further evidence that factors relating to organisational effectiveness and client outcomes require careful consideration by planners and policy makers as they are both complex and interdependent (Kelly et al., 2018). Individual characteristics of clients influence levels of engagement, and the results reported here provide ample justification for more expansive investigation. It is encouraging that the clients in this study rated aspects of their treatment in Irish OST organisations positively, but other results emphasise the necessity of multi-agency strategies to deal with client factors such as poor housing and low levels of education. In respect of providing appropriate organisational level and cross-sectoral responses to address the needs faced by users of OST organisations, Irish policy makers have to date, fallen short (Mayock and Butler, 2021b).

This study also supports findings from previous studies, that the ORC tool and process model initially developed by Lehman and colleagues (2002) to measure readiness for the adoption of technologies, can also be utilised effectively as a generic measure of organisational functioning (Greener et al., 2007). The instruments and measures utilised in this study appear to have acceptable utility in the Irish context. Overall, means and norms scores as well as reliability ratings for both instruments used in this study, are similar those achieved in the US (Joe et al., 2002, Greener et al., 2007). Overall, organisations do not exist in a vacuum, and it is likely their effective development would be best supported as part of a comprehensive and standardised workforce development strategy (Intergovernmental Committee on Drugs, 2014a, Roche and Pidd, 2010).

This is something which has received some, but not adequate resourcing or attention across many jurisdictions including Ireland.

6.4.1 Individual level characteristics and association with engagement

While this study did not set out to comprehensively assess client complexity, it yielded results which are worthy of discussion. Those who saw a counsellor reported higher ratings of treatment participation and rapport, however the availability of counselling and uptake in each organisation was not measured. Further assessment of client characteristics and motivational levels are required to ascertain the impact of the counsellor or client effect on this result, as it is likely that these will have an impact (Crits-Christoph et al., 2011, Simpson et al., 2009). The relationship between having stable accommodation and having higher levels of treatment participation appears to support findings from other studies conducted in the Irish context where homelessness was negatively associated with retention in treatment (Darker et al., 2015).

In this study, almost a quarter of those surveyed were in treatment for between 73 and 336 months. This group had significantly lower ratings of satisfaction with treatment than others. Reduced satisfaction with OST treatment may have been associated with lower levels of organisational intensity, support and appropriate treatment options provided for this group (Hser et al., 2004). In the Irish context, this finding supports those from other studies conducted with clients in long term OST treatment, where people in 'long term' methadone treatment, identified that they felt increasingly marginalised through their experiences at the organisational level (Mayock and Butler, 2021a). This has been referred to as 'institutional stigma' when an organisations policies, practices and culture reflect negative values regarding methadone and drug use and may also reflect clients historical experiences (Woo et al., 2017). Utilising peer support in substance misuse

treatment has been shown to increase client ratings of treatment satisfaction (Reif et al., 2014). In this study, this 'longest in treatment' group were also less likely to view their peers as a source of support, but the mechanisms involved and direction of this relationship is not clear.

In the final regression model, the group (3) in treatment between 25-72 months also had higher rapport with their keyworkers than other groups in these categories and the explanation for this may be worthy of further investigation. Both levels of analysis revealed that the more educated clients were, the less that they saw other clients as a source of support. This appears to support findings from studies on group therapy where the phenomena of *social identification* occurs more readily when people see other group members as being more like themselves and may have implications for workers when considering how to facilitate appropriate peer support for clients (Cruwys et al., 2020).

An unexpected but important finding was that almost two thirds of clients reported that the professional that they saw the most often was a doctor. The median length of time in treatment was two years and although the frequency of attendance was not directly assessed in this study, clients typically attend clinics in Ireland on a weekly or twice weekly basis. The clinical justifications and economic implications for this are open to question and are worthy of further analysis. One possible explanation for high levels of medical input may be that OST guidelines in other jurisdictions provide explicit guidance around risk management and necessity and frequency of medical review, while Irish guidelines do not (NSW Ministry of Health, 2018, Health Service Executive, 2016a).

More expansive use of other suitably qualified non-medical professionals such as nurses, counsellors or drug workers as keyworker/case managers as per other jurisdictions should be a key focus of organisation managers and policy makers as this could make better use of medical resources and expand the role of existing, suitably qualified staff (Department of Health UK, 2017, Public Health England, 2017). Expanding the role of nurse prescribers of OST was also recommended in a comprehensive review of OST treatment in Ireland over a decade ago and has been included as an objective in the Irish National Drugs Strategy, but supporting legislation has not been passed to facilitate this (Farrell and Barry, 2010, Department of Health, 2017a). Ireland is not practising consistently with international trends in this respect (Clancy et al., 2019).

6.4.2 Organisational level characteristics associated with client engagement

Measures in the motivation for change domain did not relate to any aspects of client engagement. This does not replicate findings from other studies where in organisations where staff identified greater programme needs, there was a significant relationship with treatment participation, treatment satisfaction and counselling rapport (Greener et al., 2007). This may be attributable to differences in sample size or staff and organisational characteristics between studies. Organisational level variables were shown not to influence levels of peer support but this domain did relate to individual characteristics, such as educational levels. Cross comparison of results in this respect is not possible as other studies involving ORC and engagement measures, did not report on findings in relation to peer support (Kelly et al., 2018).

Overall, in the first level analysis, in organisations where there were more staff who saw themselves as having better skillsets and greater influence with peers, these organisations scored

more favourably on the engagement scales overall. The implication of this is that workers who report a high level of confidence in their skills and see themselves as being influential with their work colleagues are also likely to possess attributes which make them more effective at establishing good therapeutic relationships with clients. This also reflects favourably on the organisation's overall ability to engage clients and is likely to relate to the influence of their leadership qualities on the organisation (Carpenter and Sherbino, 2010, Rogers, 2010).

It is not clear why in organisations where staff reported having greater internet access, clients reported greater treatment participation and counselling rapport. One possible explanation for this may be related to the impact on staff skillsets as it has been shown that access to e-communication is predictive of the frequency of exposure to and adoption of new approaches learned in training (Lehman et al., 2012a). Within the organisational climate domain, organisations with better perceived communication between staff and better openness to change had a significant impact on treatment participation. However, staff autonomy otherwise termed *discretionary power* was a significant predictor across all engagement measures except peer support in the primary and final regression analysis. Within frontline healthcare settings greater job autonomy relates strongly to job satisfaction and better role clarity and lower levels of burnout (Madathil et al., 2014, Pron, 2013, Shacklock et al., 2012). This finding should encourage managers within substance misuse organisations to consider ways that the autonomy of their staff can be enhanced or maintained. Planners should consider structural and governance arrangements which will facilitate safely increasing the correct balance of staff autonomy in practice.

6.3 Strengths and Limitations

This study supports findings from larger studies conducted in the US. Cross sectional studies are a suitable approach for evaluating organisations (Prince et al., 2003) but they are also considered low in terms of evidential hierarchy, and limit our ability to infer causality within the relationships identified in this study. The participants in this study represent a convenience sample and it is unclear which personal and organisational characteristics or other sources of bias that may have influenced their participation in the study. While the sample is geographically diverse and significant in the context of Irelands small population, the sample was not randomised and may not be fully representative of the Irish OST treatment population or workforce as a whole. Because ethical approval and data collection relied on anonymous participation of organisations and individuals this facilitated recruitment, but this also imposed restrictions on data analysis and opportunities for gathering linkage data between individual staff and clients. Specifically, it was only possible to establish relationships between ORC and engagement using aggregated data at the organisation level. Reporting on variables such as organisational size, staffing numbers and funding while valuable, would have made services identifiable in the context of Irelands small population.

6.4 Conclusion

Historically, the process and dynamics of *how* treatment works have been referred to as a 'black box' of unknown variables (Gossop, 2006b,p73). Almost two decades later, it is still evident that too little is known about the important relationships which exist between organisational characteristics and client outcomes (Van de Ven et al., 2020). This cross-sectional survey set out

to address this knowledge deficit by identifying which organisational and individual client characteristics enable organisations to effectively engage clients in Irish OST community prescribing organisations. The findings here support the application of findings from studies conducted in the US. The results described here demonstrate that the ORC tool provides a measure of several areas of organisational functioning which can be predictive of positive therapeutic relationships, levels of treatment participation and satisfaction with treatment.

Specific client characteristics were also shown to relate to levels of engagement with organisations, and how likely people were to see their peers as a source of support. These results provide justification for further investigation. The results provided in this study have implications which not only provide an important basis for future research, but also provide information for policy makers and planners when designing organisations currently. While it may be important to respond to client needs at a local level, there is little consensus in relation to what the optimum service configuration looks like, and the design of organisations is often decided based on fiscal constraints and arbitrary decision making. This is reflected within the broader body of process research in healthcare, where more consensus, less heterogeneity of approaches, and a consensus use of language is also required (Lewis et al., 2020)

Studies from other areas of healthcare, such as in-patient hospital settings, have shown that organisational attributes such as staffing levels, skill mix, burnout, and educational levels of staff have shown to have direct relationships with outcomes such patient mortality (Garcia et al., 2019, Aiken et al., 2014). Such large scale, longitudinal studies are desirable and necessary in substance misuse organisations but would require significant resources and conducting such studies in

community settings also poses significant methodological challenges. Similarly, planning and measurement of the impact of workforce related policies and strategies over time involves assessing relationships between a large number of variables and this is also beyond the scope of most studies. From this perspective, it could be argued that it is more feasible to measure the success or failure of a wide range of policies at the organisational level, which is at the interface between policy and people. It is also desirable that this type of research is preceded by well-planned and properly executed workforce and organisational development strategies, all of which have been underpinned by ‘systemic’ or ‘joined-up’ thinking.

Chapter 7: 'They don't actually join the dots': An exploration of organisational change in Irish opiate community treatment service's[14]*

7.1 Introduction

If treatment services for people who use drugs are to maintain or improve how they meet the dynamic needs of people who are dependent on opiates, they must rapidly adopt to immediate needs, new approaches and technologies, as well as develop a proficiency in working with a multitude of different agencies (Kelly et al., 2017). From an organisational perspective, we know that some treatment services are better than others at providing treatment, where more effective services yield better outcomes for service users such as increased levels of psycho-social functioning, and reductions in drug use (Greener et al., 2007). While it is known *that* treatment for people who use drugs works, very little is known about the process and dynamics of treatment services which explain *how* and *why* they work, or effectively adopt to the changing needs of people who use drugs.

It is likely that the effectiveness of treatment relates to a multitude of factors, which are both internal and external to a treatment service. For example, factors which are internal to a service such as staff turnover, burnout, resources, climate, culture and leadership are likely to have an impact on the internal service dynamics and treatment effectiveness (Skinner and Roche, 2021, Landrum et al., 2012). External factors such as the development and implementation of policy, or

[14] KELLY, P., HEGARTY J., DYER KR., O DONOVAN A., 2021c. 'They don't actually join the dots': An exploration of organisational change in Irish opiate community treatment services. *Journal of Substance Abuse Treatment*, [Available online 9 July 2021, 108557] https://doi.org/10.1016/j.jsat.2021.108557 * As this paper was unpublished at the time of this thesis submission, the text here may differ from the final accepted manuscript.

its ideological underpinnings are other factors which are thought to be particularly pertinent in term of their impact on the effectiveness of treatment of drug dependence (Mayock and Butler, 2021b, Duke and Thom, 2014). The nature or extent of these relationships and how they impact on treatment remains unclear.

There is no one 'over-arching' theory which can simultaneously describe how organisations and change within those organisations works. There are however a range of seminal theories and concepts which can help our understanding of how organisations work and are relevant for underpinning practice-based change and research design. For example, systems theories describe organisations as a collection of individual components where examination of a singular phenomena fail to encapsulate whole interdependent systems and sub-systems (Von Bertalanffy, 2013, Orton and Weick, 1990). This suggests that we should consider events in organisations as having multiple causation and that change can only occur by changing a system and not just its individual parts. Consideration of the *drivers of change* (e.g. economic, technological) and *types of change* (e.g. planned, unplanned, big or small) are also thought to be important in terms of understanding *how* organisations and change work (Porras and Robertson, 1992, Crowther and Green, 2004). Within seminal organisational change theories and where measurements of change have been operationalised in practice, change is interpreted as a multi-stage, non-linear process and not just a 'once-off' event (Louie et al., 2021, Lewin, 1958). From these theories, we can deduce with some certainty, that organisations are complex 'eco-systems' where the specific characteristics of organisations are influenced by a plethora of overlapping and interdependent factors.

While a number of conceptual approaches related to organisational structure and organisational change were considered relevant, the concept of *organisational readiness to change* (ORC) was considered to provide an appropriate conceptual guide for this study. ORC, a multi-level construct, is a key concept with the field of organisational development and is described as a shared psychological construct of how *willing* and *able* staff are to support organisational change (Weiner, 2009). Theoretically at least, ORC is influenced by a plethora of determinants such as the nature of a specific change, and a range of contextual and informational factors which are internal and external to an organisation (Holt and Vardaman, 2013, Weiner, 2009). In practice however, two systematic reviews on ORC which included over 20 studies, mainly conducted in U.S. addiction treatment services, determined that where ORC has been operationalised or measured it has most typically not incorporated a specific change, but has been used more as a measure of overall organisational functioning (Kelly et al., 2018, Kelly et al., 2017). Studies included in these reviews have identified that staff perceptions of; specific types of organisational resources such as staffing, aspects of organisational climate such as communication and openness to change and staff attributes such as having influence with peers and more job autonomy, can make services more effective at both innovation adoption and engaging service users (Lehman et al., 2012a, Simpson and Dansereau, 2007a). While relationships between ORC, change adoption and client engagement were established in many of these studies, the mechanisms which underpinned these relationships remained unexplored, and there is a dearth of prospective, interventional studies, or qualitative exploration which facilitated retrospective analysis (Kelly et al., 2017).

Overall, the evidence on how substance misuse services work is characterised by a deficit in knowledge of what organisational and workforce attributes make a service more effective at

adapting to change and at delivering treatment (Louie et al., 2021, Van de Ven et al., 2020). The complexity involved in identifying factors which influence a services ability to adopt to change or its treatment effectiveness may be one reason why this question has not received appropriate levels of attention. The availability of resources, incentives for researchers, and methodological challenges are also likely to play a part (Kelly et al., 2018, Bauer et al., 2015). In the absence of large scale and resource rich studies, qualitative inquiry is an appropriate approach as it will allow for retrospective inquiry and can provide insights into how social and cultural and organisational phenomena impact on respondents and their perceptions of service functioning (Flick, 2018, Foss and Ellefsen, 2002).

7.2 Method

This qualitative research focused on exploring staff perspectives of organisational functioning and change in community opiate prescribing services in Ireland. Specifically, this research was focused on what factors might influence a services effectiveness at adopting to change. A qualitative descriptive approach was used as this is thought to be particularly useful for research in healthcare through the provision of rich, straightforward and factual explanations for different perspectives on the same phenomena (Colorafi and Evans, 2016, Neergaard et al., 2009). Ethical approval was granted for this study from two regional ethics committees in Ireland. For this study, services were considered separate when they operated from different buildings only.

7.2.1 Recruitment

Participants were recruited from a convenience sample of 12 [seven urban and four rural] publicly funded community opiate substitute prescribing clinics in Ireland using a purposive sampling approach (Etikan et al., 2016). Services were identified through a combination of internet searching, consultation with regional managers of addiction services and through a wide range of consultations with members of bodies representing professionals such as psychiatrists and nurses. Permission to access services was obtained directly from service managers, all staff teams were emailed with details of the study and in most cases the researcher met with the multi-disciplinary teams in person, answer any questions about the study, and to identify suitable participants. Although there is no national registry of addiction services or prescribing services in Ireland, it is estimated that the clinic sample represents approximately 40% of all such clinics nationally. All 12 clinics that were approached, agreed to participate in the study on the basis that their anonymity would be assured.

To be eligible for participation, staff had to be over 18, have direct contact with service users and have worked or volunteered in individual OST services for more than 14 hours a week for a period no less than one month. Within these confines, effort was made to recruit participants from a range of professional backgrounds, subject to their availability in busy clinical environments. Data adequacy was considered by the research team in terms of the study design, composition and number included in the sample, but also the depth or *richness* of the data required from each participant (Vasileiou et al., 2018). Based on this, *thematic saturation* was considered as an appropriate means to justify sample size (Fusch and Ness, 2015). Thematic saturation was considered to have been reached after 10 participants and considering the study design, study

objectives and phenomena under investigation, the decision to include 12 participants was deemed to be appropriate (Alder and Alder, 2012, Baker et al., 2012). The 12 staff represented three quarters of staff approached to participate throughout the course of this study.

7.2.2 Interview procedure and data collection

A number of different interview approaches were considered for this study (Mitchell, 2015). The semi-structured interview design was considered most appropriate and its design and implementation followed a five-step process described by Kallio et al. (2016). (i) Pre-requisites for using semi-structured interviews were considered; a semi-structured interview guide was used as this was considered appropriate for participants to openly explore their experiences and provide a lucid description of the constructs under discussion (Mitchell, 2015, Watson et al., 2008, Sandelowski, 2000b). (ii) Previous knowledge was assessed examining important concepts, and findings from two systematic reviews on organisational readiness to change in addiction treatment services were considered (Kelly et al., 2018, Kelly et al., 2017, Weiner, 2009) and (iii) A preliminary interview guide was formulated on this basis (iv) A pilot study was conducted (n=2) before (v) the semi-structured interview schedule was deemed appropriate. When recruiting, staff were approached individually, and subsequently interviewed in a quiet room in their places of work. Following the provision of an information leaflet, an opportunity was given for participants to ask questions about the study before the administration of consent form which was signed by all participants. To develop a sample overview, demographic data, which was pseudo-anonymised, was collected.

In order to encourage participant comfort, all interviews commenced with a question about the persons career to that point. Subsequently, several areas relating to organisational functioning were targeted in the discussion relating to what works well in the organisation, how the service helps service users, how effectively the service adopted to change, what facilitated this change (or not), what could be improved and how [Interview schedule is available in **Error! Reference source not found.**]. While the interview focused on specific topics, a flexible approach was used by the interviewer in order to allow participants to identify salient topics and talk openly (Silverman, 2013). This helped to maintain focus on the important experiences of working in services. Interviews lasted between 1 hour and 1 hour 25 mins. Data was collected between July 2019 and March 2020.

7.2.3 Data management and analysis

Trustworthiness was carefully considered throughout this study including at the design stage (Elo et al., 2014, Thomas and Magilvy, 2011). Interviews were transcribed verbatim, but with all personal identifiers removed and the text was cross checked for accuracy. Analysis was guided using a content analysis approach as this is considered the most appropriate type of analysis where a qualitative descriptive approach is used, and it is also considered a most suitable approach for organisational research (Duriau et al., 2007, Sandelowski, 2000b). Considering the study objectives and the need to provide *rich* information, using a *latent* approach to data analysis was considered acceptable and appropriate (Graneheim et al., 2017, Bengtsson, 2016). Analysis was guided specifically using a step by step process for content analysis described by Erlingsson and Brysiewicz (2017). Firstly, the content of the interviews was analysed by the researcher (PK) reading and re-reading the data in order familiarise with the text and identify emerging categories

and themes. Meaning units were developed and then through an iterative process involving cross-checking and discussion with the research team (PK,AH,JH). These three researchers initially reviewed six transcripts and met at various intervals to reconcile a list of codes that captured all of the relevant data. Subsequent interviews were then coded by one researcher (PK) and new codes were developed if or when required. These codes, were then condensed into sub-categories, categories and finally themes using an inductive process where the team met at regular intervals to develop consensus and ensure consistency across all of the interviews (Erlingsson and Brysiewicz, 2017, Yates and Leggett, 2016). All members of the research team (PK,AH,JH,KD) had previously attended training courses in qualitative research which incorporated techniques on how to best account for their subjectivity. A reflexive approach was taken throughout the process through the use of a reflective diary by the primary researcher (PK). This approach was not undertaken from a firm philosophical standpoint, but in order to account for the primary researchers position or impact on the research process (Jootun et al., 2009, Dowling, 2006). The reflexive diary took account of reflections on each service visited, the interview process, the dynamic between interviewers and interviewees and laterally to take account of sources of bias in the interpretation of data. Reflections were discussed with the research team during all group meetings (Dowling, 2006).

7.2 Results

7.3.1 Participant and service characteristics

The study cohort were interviewed across 10 different geographic locations in southern Ireland at their places of work. Four of the interview participants worked across several services under the same management structures. All participants worked in prescribing services with multi-

disciplinary teams comprising mainly of both permanent and sessional prescribers, nurses, counsellors, psychologists, social workers, drug workers and general assistants. Sessional prescribers were typically non-addiction specialist General Practitioners (GP'S) working in their own practices, who attended OST- services for once or twice a week 'clinics' to prescribe opiate substitution therapy and briefly review service users. Interviewees came from a medical or nursing background (n=4), a counselling or psychology background (n=5) or worked as drug workers/general assistants (n=3). The seven women and five men were predominantly white Irish, had a mean age of 49, had been in their posts for longer than five years and were educated to either degree (n=9), masters (n=3) or PhD (n=1) level.

7.3.2 Findings

During interviews, all participants discussed their services ability to adopt to change in two related contexts; responding to more immediate service user needs, and implementing specific innovations across the service, such as new therapies, physical health interventions or changing the physical environment. Generally, participants referred to a service in terms of being in one building, but participants who worked in more than one area, or across buildings, typically discussed the service in that context. Three inter-related themes arose from the data [

Table 7. 1] The themes were articulated as three distinct needs i.e., need to (i) Meet people where they are at (ii) join up the dots (iii) get buy in (for change initiatives)

Table 7. 1 Summary of findings from qualitative interviews; themes and sub-themes

Theme 1: 'Meeting people where they are at'
How the service meets service user needs; meeting needs as a driver of organisational change; where we have come from-'shifting the balance' and meeting service user's where they're at; how the service needs to change to meet service user needs.

Theme 2: 'We need to Join up the dots'
Inconsistencies in how individual staff and staff groups operate; operational differences within and between services; how recruitment and retention impact on change adoption/service delivery.
Theme 3: Getting 'buy-in'
Organisational attributes and attributes of change which support or inhibit change implementation; ensuring stakeholder buy in, ensuring measurement or 'follow through', risk aversion and lack of resources impeding change.

7.3.3 Theme one: 'Meeting people where they are at'

Staff identified that service users in OST treatment have a plethora of complex needs which might be described as existing on a 'spectrum of need'. Drivers of significant changes to the services over time, how current levels of service effectiveness were measured, and aspirations or motives for future changes were all described in the context of needing to 'meet people where they are at' at all points on this 'spectrum'. In this regard, it was universally expressed that both staff and services were on a journey which was not yet complete.

7.3.3.1 How the service meets service user needs

All interviewees focused strongly on the relational aspect of care. Being warm, empathetic and non-judgemental were seeing as being important personal traits for staff. Interviewees, held largely positive views of their services in respect of using limited resources well, meeting service user needs and relationships between staff and with service users. There was a widely held view that services were overly focused on the prescribing of OST and testing of urine samples, to the detriment of psycho-social and other aspects of care:

"It's very medicalised, I feel. Very medicalised. And so the whole culture of that is about my prescription and you know, and the other elements, which we do try to, I suppose, encourage

people to partake in, you know, whether it's counselling or whether it's group work or even just looking at training. All of that kind of takes a back seat in a way to that really important event."

Most staff supported the idea that their services were good at adopting to change and that staff were willing to 'go the extra mile' for service users. In order for service users to access holistic care, having diversity in skill mix, good relationships between staff and having staff with greater levels of experience was considered to be important:

"I do think it's very patient or client-centred and accessible in my opinion .....we have good relationships as a team...with the range of professionals who are working in the clinic. There's a good, rounded service provided, in my opinion"

"I suppose we'd meet, we meet, I won't say everybody does, but I think a lot of people meet clients' needs. We meet the client where they are themselves"

Improved collaboration with outside agencies was considered to be highly important by staff in terms of meeting service user needs. All participants reported some progress in this, but this was inconsistent across services. Specific examples of integrated working included; developing a shared treatment model with mental health services for working with dual diagnosis, to developing a multi-service confidentiality/consent form:

"So that's a really good piece as well because not only are we getting to do a significantly important I suppose joint piece of work around this person, we're also getting to know so many

more people out in the, be it the homeless service, be it the accommodation, you know, all the different services, the detox units, you know, the recovery units, that they're all coming in and that I suppose we're open for business."

7.3.3.2 Meeting service user needs as a driver of organisational change

Participants felts that volume and complexity of cases had increased over time and staff said that they were also expected to 'do more' to address this. The success or failure of services to adopt to change was discussed by all staff in terms of how successfully services improved how they met service user needs or not. Having good communication and relationships with services users in this respect was seen as imperative in order to change service responses to meet their needs. Understanding and needing to respond to a wide range of service user needs, was seen as a significant motivation for changing practice and services. These changes related to areas such as or supporting service users in their difficulties when interacting with a range of other services, for example legal, housing, or other treatment services or responding to emerging drug trends:

"we do change [practice], I think, when they come in and tell us. Yes. I think they're open as well at telling us about new drugs and that, do you know."

"Yes, we are all adults and we are not doing it for our own ego's or anything like that, we are doing it for the service, and we are doing it for the people we work for [service users]*."*

7.3.3.3 Where we have come from; 'shifting the balance' and 'meeting service user's where they're at'

Participants described a transition in the ethos of services over the previous decade or more, from that of an abstinence based and ideologically driven approach, to what was described as more person-centred 'compassionate pragmatism'. This involved a shifting emphasis towards the use of scientific evidence and a more harm reduction approach. Services in the past were described as being less accessible and more limited in terms of what they offered service users, specifically in terms of the range of psycho-social supports available, and in respect of flexibility around substitute prescribing regimes. Much of this 'status-quo' was attributed to staff factors such as; training limitations, groups of staff working in 'silos', and the ideological disposition of staff:

"I suppose the thing that I've noticed the most is when I first came to work here, there was more emphasis on the disease model and we've moved away from that and we'd be much more pragmatic in our approaches and I would say that most of the teams have embraced the harm reduction model"

Staff also described their own sense of dissatisfaction with this 'old' ideology and its limitations in meeting service user needs, as one of many motivating factors for wanting to change it. Services in the past were described as being 'punitive', with one participant using the metaphor of the service constantly 'wrestling' with service users. It was identified that this was still a work in progress as not all staff and practices fitted with this 'new way of working' and that the system still makes people feel 'controlled'. Almost all staff were disparaging towards the 'old way' of doing things:

"The treatment of addiction has been blighted by people dogmatically following an ideologically based approach rather than a pragmatic empathic compassionate based approach."

No specific event or decision was identified in terms of driving this change in ideology. Leadership and a greater divergence in staff skillsets were thought to be a positive contributory factor. Some participants identified the drivers behind this change as being part of a wider societal trend or 'cultural' shift where drug users were being viewed with increasing compassion which influenced national drug policy and was reflected in 'conversations' that began happening in the clinics:

"I think there's also been like a greater focus on the organisation shying away from kind of an authoritarian sort of approach to kind of treatment and how the place is run to more of a client-focused… And I can't kind of say specifics, but there would be a kind of focus on the person rather than the kind of rules of the organisation. Yes, yes, yes."

Participants described specific changes across services which exemplified this 'shift' in service ethos. Some of these were described as being 'traumatic' to the point that some staff left their posts. These changes included; building purpose-built clinics, changes to the lay-out of existing clinics, changes to practice, significant collaborations with other agencies or in some cases changing entire service models, described by one participant as:

"Moving from a sense of the professionals care plan to a rehabilitatory philosophy of 'it's the clients care plan, and we are the public servants who are supporting and empowering the clients care plan'".

It was thought that 'shifting in the balance' benefitted service users by 'sending them a message that they are valued', delivering a more holistic service, and focusing less on drug use as a measure of treatment success. Within teams, it was generally reported that there is now more focus on evidence-based practice, clearer service goals, and increased communication amongst teams through collaborative working.

7.3.3.4 How the service needs to change to meet service user needs

Aspirations for change related directly to meeting service user needs and related to either operational aspects of services or resources. Better psycho-social support for mental health issues and navigating through a range of services was expressed as a priority. Many staff suggested recruiting outreach staff or recruiting a lead addiction psychiatrist to accomplish this. It was also felt that cost-neutral changes to the operation of nurses and prescribers could increase engagement and reduce waiting times, [4-6 months in some areas], but this was impeded by organisational structures:

"If we just did things better, more efficiently, you know, and utilised, you know, all of the staff that we have, we could save them a bit of money. So we should be. That should be a no-brainer for people. I think the hierarchical system that we're in makes it very, very difficult"

Having better access to in-patient services such as detox, stabilisation and rehab was also considered to be a priority. Appropriate physical infrastructure was also considered to be important for safety, particularly in wating areas, and would also indicate to service users that they are valued:

"We're thrown into an old unit and they're coming up to us and I think it'd be more suitable to the clients if we did have kind of a proper purpose-built unit. It would show them they're kind of valued…"

7.3.4 Theme two: 'We need to join up the dots'

Staff overwhelmingly expressed that there was a lack of 'standardisation' with treatment services and between services. This related to differences in practice of staff in the same or similar roles, differences between how staff groups within the same service operated when dealing with service users, or significant operational differences between OST services and external services, this included other OST services under the same management structures. It was felt for a range of reasons, that deficits in 'standardisation' resulted in difficulties retaining staff and obstructed successful implementation of change and/or the services ability to meet service user needs.

7.3.4.1 Inconsistencies in how individuals and staff groups operate

Multi-disciplinary clinical meetings were seen as a place where staff could exchange ideas and challenge and improve practice. Not all services held clinical meetings with all disciplines present and there was a sense that this inhibited the ability to respond to needs:

"[counsellors have their meetings] *and then doctors, nurses and the managers have their meetings. So I think everyone needs to kind of come under the same umbrella for it to work properly"*

Apart from two services, participants across disciplines observed that there were significant differences in prescribing practices within services, ranging from punitive to lenient. These differences related to how closely prescribers followed OST guidelines for taking urine samples, drug use, and take-away methadone. This had a detrimental impact on how consistently the service was delivered:

"It has a big impact on those [service users] because they receive totally two different services, and we see it!"

Some of this was attributed to the use of sessional prescribers, and differences in how prescribers responded to risk, as well as ideological differences about addiction, such as subscription to abstinence-based approaches or morally-based standpoints. The use of full-time prescribers in services was described by one prescriber as an 'oddity'. These differences communicated a sense of inequity to service users, resulting in inter-personal conflict which support staff have to manage:

"Now, some [prescribers] *are very good and will listen and, you know will kind of be aware of policy, will be aware of good practice and there may be others who don't and it's kind of 'This is the way we do it and that's it', which can be very difficult with service users."*

Some participants described an informal division in teams between clinical (nursing/medical) and therapy staff where these teams often had separate meetings. It was perceived that these groups set boundaries differently with service users. Clinical staff reported having less time to spend with service users and referred to themselves as being a little 'harsher' than therapeutic staff:

"And they're more therapeutic and we're more medical and we're more black-and-white and they'd be a little bit more flexible, I think, with stuff."

Some participants observed that therapy staff received in-house and external supervision or 'lots of maintenance' while clinical staff rely on more informal support. A desire was expressed to have these professional structures in place for all workers as it was useful for reflection on the implementation of more 'nuanced' training and new practices, as well as emotional support:

"Supervision isn't done out in the [place omitted], but like it really, really works, I think, to help you work through problems when you're in this. You want to bounce things off and say, 'Did I do that right? Did I do it wrong? Or what do you think of that?'

"They [counsellors] would have outside supervision. They would have one-to-one supervision with seniors, whereas on the medical side of the house, we're like who's got the time for that? Ok? And then I suppose people are having conversations and it's like the grass is greener on the other side of the fence. So like ok, they're getting that. Why can we not do that?"

Team cohesion was also thought to be adversely affected by differences in how staff adhered to their role boundaries and implemented team decisions. This impacted negatively on how the service met service user needs by sending them 'mixed-messages'. Conversely, staff working at frontline level spoke about being excluded from team meetings, having to step outside the boundaries of their roles to meet service user needs, and expressed frustration as they felt that their skills were not recognised:

"So most of the work, we're like key workers. We're on the ground. We're getting stuff done. We're giving them advice. We're telling them where to go. So we have so many skills, but not utilised."

7.3.4.2 Operational differences within and between services

Differences were observed in how services within the same management and governance structures operated, particularly where staff worked across several services. The differences identified related to clinical leadership, skill mix of staff, the number of clinic opening days, level of prescribing cover, level or type of psycho-social support available to service users, approaches to risk management, and adherence to protocols. It was identified that these service structures presented barriers against implementing change and a strong desire was expressed for standardisation across services:

"*We're supposed to be all working from the same protocols and the same policies and we're not, we do things very, very differently…. so then that can cause different language, different discussions, how we see a client and work with a client differently"*

One participant attributed this to how services were structured from a 'macro' perspective, in terms of how policy was implemented and how services were planned and developed:

"A lot of the services came into being because the need was recognised first and they put the service in without really thinking more broadly about the structures of those services….it is a bit

of a battle from that point of view, trying to bring about change and to influence change- because of the way the services are structured"

From an organisational perspective, factors that were identified as working against change were; rigid staff hierarchies, role entrenchment, not having clear clinical leadership structures, inconsistencies in implementing standard operating procedures or policies, and not addressing poor performance of staff. Many staff spoke about this as being reflected in an overall culture which extended more widely into the health service and government, where it was felt planning and accountability could be improved:

"To say, 'Yes, we did get it wrong' or… And at times, I suppose we see this right up to the political level, don't we? Where we're looking at a statement being made only the other day, 'We got it wrong, we're really sorry'. How long did it take that apology to come?"

The importance of leadership was emphasised in terms of improving services' internal structures, the development and implementation of national policy, as well as streamlining processes between different community services. While staff generally reported that improvements had been made in respect of integrated work with other services, this was still considered to be a 'work in progress' that needed greater direction, planning and more connection with and recognition of events on the ground from policy makers and planners:

"I think that's somewhere where up along the line, they don't actually join the dots and then it leads to frustration down along the line where people are trying to join the dots, are trying to get

people into services, moving along, getting the next stage…get them healthier or whatever and sometimes the dots aren't joined."

As well as needing to improve the planning and integration of services more broadly, it was thought that increasing the standardisation of how services operated would address many of these issues and ensure more continuity of care. It was felt that this would reduce an over reliance on individual staff members, thus increasing equity and consistency of care for service users. It was also thought that improving governance would allow services to feel more comfortable in taking positive risks, both in adopting structural change and in responding to service user needs. Staff who worked in other areas spoke about their experiences of different governance structures and the impact that these structures had on ability to adopt to change and meet service user needs:

"I can see a difference because I came from working with [name withheld] *and the governance structures were really clear. The leads were really clear and so it was a lot easier to look at change and to look at best practice, and to kind of work"*

Several staff felt that oversight and monitoring would be important for improving standardisation in terms of both individual and organisational performance. Staff identified several frameworks such which could be used to 'benchmark' service standards and suggested that these could be monitored by means of internal clinical audit or through external regulation, the latter is not currently a feature of addiction services in Ireland:

"There was supposed to be this QuADS, which was Quality for Alcohol and Drug Services, and they were going to be like, my understanding, An Bord Failte [Irish tourist board], where they come and you get three stars, four stars. You know, that sort of thing. I think we need HIQA [independent health inspector] to come in and say, 'Why don't you have a safety statement? That's against the law'"

7.3.4.3 How recruitment and retention impact on change adoption and service delivery

Difficulties in recruiting and retaining staff were identified as something which adversely affected an organisation's ability to sustain organisational change and respond to service user needs. It was identified that the principal reasons for staff leaving were related to lack of career progression and better opportunities to progress in other specialist areas. In smaller clinics, staff identified negative impact on service users when clinical staff were not available, such as non-attendance at clinics and increased waiting times for assessments. It was felt that a 'standardisation' of job roles career pathways and processes within clinics, as in other specialist areas of healthcare, would help to address this and support change implementation.

"Well, without that [standardisation], *you see, you're going to have a throughput of staff and that's a problem. You know, that's a problem because I think you're not going to develop things unless you maintain your experienced staff. You'd be retraining everybody all the time, so I think that's across all services."*

Working within the addictions field was not seen as an attractive prospect for outside healthcare professionals. In general, staff identified that the work was 'emotionally challenging, exciting &

wearing', with service users 'bringing in heavy stuff' and making slow progress in treatment. Several staff members reported dealing with the deaths of service users in the past year. This necessitated utilising informal supports from colleagues and giving attention to self-care outside of working hours. Many staff also suggested that increasing staff resources, and in some areas using existing resources more effectively would help to address this. Some staff felt that rewarding staff and having informal gatherings either inside or outside the working environment would benefit the team dynamic and help to alleviate the risk of burnout. Again, formal supervision was also identified as providing important emotional support and reducing burnout but was not available to all staff.

"*A lot of the time, you wouldn't see faster recoveries and outcomes like and you can get burned out from that, do you know. But I think when you have supervision and someone to talk to, it kind of stops that burn-out, do you know."*

7.3.5 Theme three: 'Getting buy-in' – facilitators or inhibitors of change

Staff discussed factors which facilitated or inhibited specific changes. The types of changes ranged from the implementation of training, change involving significant resources and multi-level 'buy-in', or both. Organisational change sometimes involved the implementation of specific types of training. Most changes described were designed and implemented based on local needs, but some changes to practice were part of national initiatives. Some staff identified that changes which made their job easier were more likely to be supported, but overwhelmingly described meeting service user needs as a significant change driver. Staff generally described that they had frequent exposure to training and all staff except one, identified that their organisations frequently discussed and

implemented change. Most staff described increasing confidence over time in their organisations ability to change, based on a history of successful change implementation:

"Do you know, if you'd asked me four years ago when I was much more cynical, I would have said no chance, but if I sit back and I reflect on what's happened, there's been huge changes. Huge changes."

7.3.5.1 Ensuring stakeholder 'buy-in'

Service managers were seen as being key 'stakeholders' in driving and supporting change due to their influence on the operational aspects of services. Managers were thought to be important in facilitating vital components of a successful 'change-culture' such as clear communication, consultation, increasing transparency and helping staff to 'know why' a change was important. Facilitating regular staff meetings, which were open to all staff and disciplines, and where change and new ideas were discussed frequently were viewed as being important. General approaches, such as having an 'open-door' policy, considering new ideas from staff, having an inclusive leadership style, bringing in new ideas regularly from training and conferences were considered as change facilitators. Obtaining support from managers or senior clinicians was seen as fundamental aspect of getting 'buy-in' which was considered imperative for the successful implementation of change:

[the change would work] "So as long as I had a consultant [specialism withheld] *who was on board, a couple of* [specialism of nurses withheld] *who were on board and myself and the director and the doctors here"*

There was no evidence of any services or change being fully co-produced with service users, but increasing professional stake-holders belief in the potential success of a change was considered to be important. In practice, this was accomplished through implementing a small scale 'pilot' for a change, or by finding examples in other services where the change had been successful. Staff used a mixture of drawing on experiences of working in other services, conducting pilot initiatives, or obtaining detailed evidence from other services on their successful initiatives:

"So that was a huge, huge part of bringing the service to them [service users] and because it was done in another drug service, we knew it worked, that model."

7.3.5.2 Ensuring measurement or 'follow through'

All successful changes were characterised by measurement or appraisal of the impact of the change, described by one staff member as 'follow through'. Conversely, in most cases where unsuccessful change was described, having no appraisal process in place was seen as a fundamental reason why the change failed. Internal audit and/or research and implementing mechanisms where this information could be disseminated to staff, were provided as examples of how the impact of change could be measured and sustained. In one case, an audit revealed that target for a life-saving initiative were not being reached, and this finding increased conscientiousness amongst the team for many other areas of practice:

[clinical audit] *"I think so, I think so because I think if you can't monitor a change, then there's no point."*

Clinical supervision was also identified by several staff as something which facilitated the implementation of of new ideas and/or training, particularly for more 'nuanced' work, for example that involved in child protection cases and in implementing structured psycho-social interventions such as motivational interviewing or CBT.

"*But like it* [supervision] *really, really works, I think, to help you work through problems when you're in this. You want to bounce things off and say, 'Did I do that right? Did I do it wrong? Or what do you think of that?' I think it's really, really good like."*

While most staff were considered to be positively disposed towards change, specific attributes of staff were seen as a factor which worked for and against change implementation. Staff attributes that mitigated against change were identified as having a negative ideological view of addiction, role entrenchment or the personality of the individuals. In terms of changing the service ethos from abstinence to 'compassionate pragmatism', bringing in new staff and staff with these 'negative' traits leaving as well as the opposing ideologies of these staff was seen as a vital catalyst for successful change:

"We did have one or two individuals who were not for moving, but they did move because that [change] was happening and you know, one person in particular decided this was no longer for them here, you know, but there was nothing we could do about that."

However, there was an acceptance that there would always be some staff that would be opposed to change no matter what. It was considered that while not without difficulty, these staff would be encouraged to change through the 'momentum' of other staff embracing the change:

"I often think of the chain on a bicycle, once it starts to move, it's all systems move, you know. The momentum is there. They have to, and if a cog gives, it gives. But the system will have to override it, do you know. It has to override it and that's the difficult bit."

7.3.5.3 Risk aversion and lack of resources impeding change

Several staff reported that having knowledge that resources and training would be provided for supporting a change over a time period increased their belief and enthusiasm for supporting change, and also resulted in successful implementation. Poor staff resources in terms of numbers of staff and skill mix, was another factor which worked against change. In one case it was considered impossible to introduce a new drug for OST as it required daily clinical review of a service user and the resources were not available to do this:

"But in some places, the cover is very sketchy, you know, and it changes a lot and I think that reflects the… I suppose I'm not talking about the general service now. I suppose I'm talking about the medical part of it. It just really reflects the state that it's at at the moment, you know. And that's how it is."

Fear of litigation and fear of risk was also seen as another factor which mitigated against change. This observation was made by several staff. This was noted more specifically around embracing a more harm reduction approach and around changing prescribing practices.

"There's so much red tape. I'll tell you, it's fear of litigation. I have never worked in an area that's so fearful."

7.3 Discussion

Findings from this study demonstrate that organisational efficacy is influenced by a multitude of interdependent factors, which are both internal and external to the organisation. In the first theme, a services ability to meet user needs was clearly identified as a 'prism' through which the success of change, need to change, and overall organisational efficacy was assessed. However, a need to 'meet people where they are at' was relevant throughout all themes and is clearly a factor in influencing *'change valence',* something which is more likely to lead to successful implementation (Weiner, 2009). In this study, it is notable that organisational factors which either supported or inhibited specific organisational change initiatives *or* helped to meet service user needs were discussed interchangeably, with no clear differentiation. This is broadly consistent with findings from quantitative studies, that many organisational characteristics, such as more openness to change, better team cohesion and good communication, which make a service good at adopting to change, can also relate to how effectively they can influence service user outcomes (Kelly et al., 2018, Kelly et al., 2017).

The provision of clinical supervision for example is something which can benefit organisational functioning across several domains. Supervision provides practical and emotional support for staff which in turn impacts on the retention of staff, their ability to adopt to change, and also helps them to form good therapeutic relationships with service users (Gonge and Buus, 2011, Wheeler and Richards, 2007). In practice, clinical supervision and other supports do not occur in a vacuum and

their provision is likely to be indicative of a healthy organisation (Pollock et al., 2017). Conversely, for participants in this study, where supervision was provided for some staff groups and not others, it negatively affected team cohesion and exacerbated a sense of 'them and us' between professional groups.

Many other factors identified here such as clinical audit, team meetings, good leadership, good communication with service users, clarity in job roles, adhering to guidelines and policy, and appropriate skill mix are all features of good clinical governance, which in if adopted correctly can act as a 'lever' in determining successful organisational change (Brault et al., 2015). These are also aspects of a service which are indicative of a healthy organisational 'culture' (Jones et al., 2005). Staff attributes, team cohesion, leadership, communication with service users were some of the factors which support organisational efficacy. Other factors which are external to an organisation, such as culture, societal values, policy and how services are planned were also considered to be important. This is consistent with other findings, which identify a broad range of factors which can influence organisational efficacy (Louie et al., 2021, Lewis et al., 2020). Overall, this supports an argument that changes to any aspect of a treatment service and supporting services needs to be considered systemically. In this respect, there is a clear need to 'join up the dots' which may be alternatively described as adopting a more systemic approach to the planning and delivery of services. Based on the findings in this study, this would involve much greater cohesion and co-operation between policy makers, service planners, staff and service users in order to ensure consistency and quality when delivering a range of services across geographical areas.

In relation to supporting specific change implementation or 'getting buy-in', demonstrating potential effectiveness through modelling or piloting and having clear benefits to service users was considered paramount in promoting the 'change message', developing a psychological discrepancy between current and desired practice amongst staff, and increasing belief in the ability to change (Stevens, 2013). A history of successful change implementation, stakeholder involvement, the provision of appropriate resources, leadership, and ensuring appropriate measurement and 'follow through' through clinical audit and clinical supervision were all identified as characteristics of successful change initiatives that result in multi-level 'buy-in'. These findings are all consistent with those emanating from studies in the field of implementation science (Dintrans et al., 2019, Weiner, 2009).

Recruitment and retention of staff was discussed as a factor which simultaneously inhibited the implementation of change and organisational ability to meet the needs of service users. In the context that providing OST services have significant economic benefits for wider society, the pay and conditions and career opportunities awarded to staff are likely to impact on this, and are worthy of further attention (Gossop, 2015, Kroezen et al., 2015). Maintaining good relationships with service users in order to obtain information about changing trends and emerging difficulties, is also likely to be of paramount importance as service user need was consistently identified as a driver of change. There is some indication of what organisational attributes facilitate better engagement with services users such as resources, organisational climate and staff attributes and these should be used to inform policy makers and planners when designing services (Greener et al., 2007).

The Irish context is also unique. There is a long history of the provision of healthcare in Ireland by the voluntary and private sector but most notably by the Catholic church, a body which has, historically at least, a significant impact on the shape of policy making and health and addiction services in Ireland including an over-emphasis on the disease model of addiction (Butler and Mayock, 2005, Barrington, 1987). In this respect, study participants observed a 'paradigm shift' in services over the last decade or so, from abstinence focused ideology to what one interviewee termed 'compassionate pragmatism' or 'meeting people where they are at'. This shift was attributed to social and cultural factors which manifested in different ways in each service, through aspects such as new policies, physical aspects of buildings, changes in the skill mix of staff and changes to practice and leadership. Still, it appears that institutional stigma is still evident in some services through current practices in OST prescribing services and negative views of addiction (Mayock and Butler, 2021a, Woo et al., 2017). This 'status-quo' continues to create psychological discrepancy for some staff, who consider this both something that they would *like* to change, but paradoxically identify that this also presents a barrier *to* change (Weiner, 2009).

In Ireland OST services subscribe to high standards of care as outlined by 'Safer Better Healthcare' (Health Information and Quality Authority, 2012) but it is notable that unlike other jurisdictions such as the UK, there is no independent oversight of addiction treatment services in Ireland to ensure enforcement of these standards (Care Quality Commission, 2021). While aspects of good governance, such as clinical audit are evident and specific measures to standardise and improve the internal governance of OST services are explicit in Irish policy, this does not yet appear to have been fully accomplished (Department of Health, 2017a, Doyle and Ivanovic, 2009). A partial

but weakening explanation for this may have been Ireland's 'lost decade' of economic recession from 2008.

Participants in this study identified that inconsistencies in adherence to prescribing guidelines between practitioners seems to be a particular challenge. However, consistency in service delivery, and appropriate risk management need to be appropriately supported requires adequate resources, training and greater attention to overall governance in services including the willingness or ability to support or sanction staff who underperform (Veenstra et al., 2017, Brown et al., 2013). Similarly, inconsistencies in how services are delivered should be addressed through more effective leadership and organisation which should also provide a bulwark against staff working in 'silos'.

Over ten years ago, national strategies were put in place to standardise services and to facilitate inter-agency working but these strategic recommendations have yet to be realised (Doyle and Ivanovic, 2009). Overall, more guidance relating to the composition of 'good' services is required and sufficient resources should be put in place to deliver them (Roche and Pidd, 2010). Implementing these and improving overall governance is likely to help to 'meet people where they are at' through 'joining up the dots' and thus increasing overall staff 'buy-in' in responding to immediate service user needs and adopting more significant changes into practice. In summary, based on the findings in this study, the following recommendations for policy and practice ought to be considered:

- The design and full implementation of policies which promote consistency and standardisation across all addiction treatment services, this should include a focus on how to best recruit and retain staff
- External regulation/independent oversight is required to ensure accreditation of services, safe service provision, and consistent service delivery
- Inclusive clinical meetings with all disciplines present will support greater consistency in service delivery
- Sufficient resources should be made available for training, supervision and support across all staff groups and services
- Exemplars of change will help staff understand and adopt new models of service delivery, but the importance of leadership behaviours and other service attributes should also be considered

7.4 Conclusion

Organisations are complex 'eco-systems' and the specific characteristics of organisations are influenced by a plethora of overlapping and interdependent factors. The findings presented here have identified factors which are important and have implications for the planning and implementation of services, and policy development. While it is clear that these factors are interdependent, the nature of their relationship may be context dependent and whether or not there is a universal 'hierarchy' of factors is worthy of further exploration. Qualitative research yielded important insights into understanding the factors and circumstances that influence organisational functioning and successful change implementation in Irish community opiate prescribing services.

Chapter 8: Overall discussion and conclusion

8.1 Introduction

This section will provide a general summary of the contribution that the reports of the research presented in this thesis have made to the literature. This will be accomplished by synthesising qualitative and quantitative findings, discussing these findings in the context of the wider literature and making recommendations for policy, planning and future research. Perspectives on the conceptual and methodological approaches used in this study will be discussed where relevant. Firstly, a broad overview of some of the findings relating to key concepts; ORC, innovation adoption and client engagement will be discussed. Secondly the relationships between these concepts as they were operationalised and examined in this study, will be explored. The strengths and limitations of the scientific studies included in this thesis will be summarised, before making final recommendations in the context of the study findings and the wider literature. A brief overall conclusion to this thesis will then be provided.

This mixed methods study explored the relationship between organisational characteristics, adoption of change and service user engagement in Irish community opiate prescribing services. Findings from the studies included in this thesis have demonstrated that there is a likely causal relationship between specific organisational and staff characteristics, and how effectively services can engage service users and adopt new innovations (Kelly, 2021a, 2021b, 2021c). The primary research studies conducted add to the research previously completed in other jurisdictions, such as the US and specifically enhance our understanding of treatment services in Ireland. Service user characteristics were also shown to relate to how effectively service users are *willing* or *able* to

engage with services. This added knowledge helps identify and 'unpack' components of complex relationships which exist between staff, organisations, and service users. These findings will help to provide an argument against ad hoc policy and planning decisions, which in relation to drug treatment services have too often been known to be based on ideology, or short term financial considerations (Stewart et al., 2021, Duke and Thom, 2014).

The research presented in this thesis also provides a valuable basis and direction for future research. There have been few, if any, scientific studies conducted in Irish addiction treatment services which have so comprehensively evaluated staff perceptions of services and how they operate. Staff evaluations of services were shown to be important, in that services that are more favourably evaluated by staff are likely to be more effective at delivering treatment and adapt to new ways of working. The qualitative component of this study helped to identify internal, external retrospective and prospective factors which staff believe influence how effectively an organisation can operate. The research presented achieved the overall objective of this study which was to identify relationships and understand mechanisms which can facilitate organisational readiness to change and (i) innovation adoption and (ii) client engagement in Irish community opiate treatment prescribing services. A summary table providing an overview of the chapter aims/objectives and key findings is available in Table 8. 1.

Table 8. 1 Overview of chapter aims/objective and summary of key findings

Chapter	Aim/Objectives	Key findings
Chapter 1	Describe context in which substances are used, describe how substance use is conceptualised, to provide an overview of substance use and misuse; cultural, historical, theoretical and policy based aspects, exploration of terminology, discuss opiate use; its impact and treatment. To offer some critique on how drug policies and treatment developed in the Irish context.	There are a range of interpretations of drug use and dependency these have influenced how we respond to people who use drugs. People who are dependent on opiates have complex needs, a disproportionate health and economic impact, and treating them adequately requires a range of responses. Treatment, specifically OST, is effective but we know little about *why* this is the case. Workforce aspects, including organisations are important, but have received little attention in the Irish and international context. More knowledge about the process and dynamics of treatment and the impact of policy is required to support policy and planning.
Chapter 2	Describe workforce development, its importance and the current state of the organisation of workforce and treatment services in Ireland. Explore the relevance of workforce development and organisational development for the treatment of people who use drugs. Provide further justification for focusing on organisations to measure the effectiveness of workforce development strategies. Provide an overview and discussion of organisational theories and organisational change theories with a particular focus on organisational readiness to change.	Workforce development is important but it is complex and significant resources are required to assess its effectiveness. Assessing the impact of workforce development strategies at the organisational level is appropriate if we wish to understand the impact of policy and improve OST services. Across healthcare, an organisations ability to change is of fundamental importance to its effectiveness and survival. A range of organisational theories provide an understanding as to what organisations are and how change works. A key concept from the field of organisational development called organisational readiness to change provides a suitable framework to help us understand the dynamics and process within treatment services.
Chapter 3	Critically describe and discuss the literature on organisational readiness to change in substance misuse treatment services. Report on two scientific papers; (i) A systematic review exploring the relationship between staff perceptions of ORC and the process of innovation adoption (n=14 included papers) (ii) A systematic review on the relationship between staff perceptions of ORC and client outcomes (n=8 included papers)	There was significant heterogeneity in terms of study design and outcomes measured in 22 scientific papers, most of which were cross-sectional, all using the same ORC tool. The quality of papers was on average fair in terms of evidential hierarchy. More favourable ORC ratings, resources, staff attributes, change drivers and in particular climate related to more effective innovation adoption and client engagement. It is valuable to measure other service characteristics with ORC. Little is known about how to address ORC deficits. There are limited interventional, prospective or retrospective studies using ORC and no qualitative analysis using an ORC framework. The generalisability of ORC measurements beyond the US was not clear.
Chapter 4	Describe a mixed methods study design which explored the relationship between ORC and (i) client engagement (ii) innovation adoption in Irish opiate community prescribing services; philosophical underpinnings, theoretical and operational descriptions of key concepts, overview of study instruments, rationale and critical analysis of research strategy	Over-arching research strategy and study rationale was clearly justified. A cross-sectional mixed methods study design was identified as an appropriate approach in order to answer research questions which were ascertained through critical reviews of the empirical literature.
Chapter 5	Report on a quantitative scientific study which explored the relationship between staff perceptions of organisational readiness to change, staff characteristics and a process of training adoption in Irish community drug treatment prescribing services. Survey of n=132 staff across n=12 services.	Eighteen subdomains of ORC were measured with the highest perceived sub-domain being staff efficacy; mean 37.9 (SD) 8.5 and the lowest scoring subdomain being training resources; mean 28.5, (SD) 8.5. Staff perceptions of ORC and staff characteristics are predictive of training adoption in the context of Irish community OST services. Staff characteristics such as longer job tenure and higher educational levels were predictive of greater training adoption. Staff perceptions of ORC are predictive of training exposure and adoption, specifically better resources, lower organisational needs, less pressures for change, lower levels of stress and having more influence with peers was strongly associated with a higher likelihood of training adoption.

Chapter	Aim/Objectives	Key findings
Chapter 6	Report on a quantitative scientific study which explored the relationship between staff perceptions of organisational readiness to change, staff and service user characteristics, and service user engagement in Irish community-based OST services. Survey of n=132 staff, n=262 service users, across n=12 services.	Four domains of engagement were measured with the highest perceived domain being service user perceptions of counselling rapport; mean 40.72 (SD) 6.52 and the lowest being peer support; mean 31.99 (SD) 8.61. Staff perceptions of ORC and service user characteristics are predictive of better service user engagement with treatment in the context of Irish community OST services. Specifically, in organisations where staff reported greater job autonomy this was predictive of better service user engagement. Service users who were longest in treatment reported lower levels of engagement and less likelihood of seeking support from peers. Service users with stable accommodation reported greater participation in treatment. ORC was not related to peer support but service users with higher levels of education were less likely to see their peers as a source of support.
Chapter 7	Report on a qualitative scientific study which explored staff narratives relating to the factors which influence the dynamics and process of treatment services, particularly in relation to the implementation of new innovations and organisational change. Face to face semi-structured interviews with staff (n=12).	Change or innovation adoption was described by participants in terms of how a service adopted to planned change *and* service user needs with minimal distinction between organisational attributes which supported adoption in either context. Success of change was described generally in how service user needs were met. Differences in standardisation; practices, job roles, policy implementation, differences between professional groups and recruitment and retention of staff were identified as inhibitors an organisations ability to adopt.
Chapter 8	Summarise the overall findings from study and triangulation of results from quantitative and qualitative inquiry, make recommendations for policy, practice and research before providing a brief overall conclusion.	Conceptual and methodological approaches used were appropriate for the study aims and the utility of measures used was affirmed for the Irish context. Several practices within organisations which underpinned relationships between ORC, innovation adoption and client engagement were discussed in the context of the wider literature. Specific recommendations were made for policy, practice and research. The overall study objectives of exploring relationships between organisational factors and innovation adoption and client engagement and understanding some of the mechanisms which underpinned these relationships were accomplished.

8.2 Overview of findings relating to ORC

As well as contributing to the conceptual discussion on ORC, this study also advances the generalisability of ORC measures originally developed for use in United States substance misuse treatment services to the context of Irish treatment services (Kelly, 2021a, 2021b). Overall, means for the 18 ORC subscales are comparable to those from US and previous Italian administrations, with some exceptions. Irish ORC means had some differences from US and Italian samples (Kelly, 2021a, Rampazzo et al., 2006). These scores are presented below in Table 8. 2. Irish mean scores were similar to the Italian and U.S. samples in the motivation for change domain except for higher pressures for change, had significantly lower training resources and better office, computer and e-communication resources, with broadly similar measurements in the staff attributes domain and broadly similar measures in the organisational climate domain except for higher staff cohesion, lower stress and less openness to change. These results are reported 15 years apart and this may account for differences in access to computers and e-communication.

Table 8. 2 ORC; Irish, US and Italian means scores

Subdomains	Irish Mean Scores (n=132)[15]	US mean Scores (n=1,089)[16]	Italian mean scores (n=341)[15]
Motivation for change			
Program Needs	34.6	32.1	34.6
Training Needs	32.4	30.5	34.4
Pressure for Change	32.8	30.8	30.3
Resources			
Office Resources	34.6	32.6	30.3
Staff Resources	32.9	30.9	33.1
Training Resources	28.5	34.2	32.9
Computer Access	32.1	28.5	28.6
E-Communication	34.0	25.1	27.9
Staff Attributes			
Growth	32.3	35.1	31.6
Efficacy	37.9	39.8	37.3
Influence	35.5	35.5	32.1
Adaptability	38.0	38.0	35.4
Organisational Climate			
Mission	33.8	35.0	33.9
Cohesion	36.8	33.9	35.1
Autonomy	33.3	34.8	34.7
Communication	31.5	32.0	31.4
Stress	30.9	33.0	33.8
Change	30.6	33.0	32.8

In previous studies involving ORC, having higher openness to change has been associated with a higher likelihood of adopting training or new practices (Lundgren et al., 2011a, Joe et al., 2007). Higher stress has been associated with poorer training adoption and lower client engagement, but lower stress has also been associated with more rigid practices and a lower service threshold for

[15] KELLY, P., HEGARTY J., DYER KR., O DONOVAN A., 2021a. An exploration of organizational characteristics and training adoption in Irish community drug treatment services. Cork, Ireland: University College Cork.[Under review, *Substance use and Misuse*]

[16] RAMPAZZO, L., DE ANGELI, M., SERPELLONI, G., SIMPSON, D. D. & FLYNN, P. M. 2006. Italian survey of Organizational Functioning and Readiness for Change: A cross-cultural transfer of treatment assessment strategies. *European addiction research,* 12**,** 176-181.

discharging non-compliant service users (Greener et al., 2007, Fuller et al., 2007). While these findings are worthy of consideration, not all of these associations have been confirmed or investigated in the Irish context.

It is widely accepted that ORC is an important concept within the field of organisational development and implementation science, and accordingly it has received much attention (Kozlowski, 2012). Although this was not a conceptual study of ORC, this study had a strong foundation in organisational theory and organisational change theory. Differences in how ORC was conceptualised in theory and operationalised in practice were critically explored. It is important in the context of this thesis to consider that there are a range of conceptual and theoretical interpretations of ORC, and that ORC is operationalised using a multitude of different instruments (Gagnon et al., 2014, Holt and Vardaman, 2013). In his seminal paper, Weiner (2009) argues that ORC itself is a shared psychological construct comprised of *change commitment* and *change efficacy*. Weiner is critical of ORC instruments in that they measure individual readiness or assess readiness as a 'general state of affairs' (Weiner, 2009,p6). This may be true for the ORC tool used in this study which measured mainly 'state-based' and contextual factors. Weiner argues that a tool which would adequately measure the ORC construct should relate to a specific change, be group referenced, should only capture change efficacy and change commitment and that efficacy items should be organisation specific but not so specific that they are not generalisable. In this respect, a number of ORC instruments are more consistent with Weiner's (2009) seminal theory as they incorporate the proposed change itself as a part of the ORC construct (Helfrich et al., 2009, Shea et al., 2014).

Despite these important theoretical perspectives, in healthcare settings, innovation or change adoption is not an end result in itself and the overall objective of adoption is often to improve service user outcomes. In addition to this, an organisation which has more favourable ORC evaluations is likely to be successful in a number of different ways, not just in adopting new innovations (Kelly et al., 2017). For example, a range of organisational characteristics as measured by ORC, such as programme needs or staff influence which can determine successful innovation adoption, are also likely to support more effective service user engagement (Lehman et al., 2012a, Greener et al., 2007). It has also been demonstrated that ORC measures can be used as part of a feedback mechanism for staff in order to measure and improve overall organisational functioning, something which is important for both maintaining a good working environment and improving service user outcomes (Crits-Christoph et al., 2011, Courtney et al., 2007). This supports the overall utility of the ORC measurement developed by Lehman et al. (2002).

This study did not set out to measure all of the ORC constructs established by Weiner (2009), and assessed many of the component aspects or *determinants* of readiness as opposed to the readiness construct itself. Despite these confines, the use of mixed inquiry provided a much richer understanding of these determinants and which of these determinants may be of greatest value to staff, such as job autonomy, education and standardisation of practice. Few mixed methods or qualitative inquiries of this nature have been conducted in substance misuse treatment services internationally (Holt and Vardaman, 2013, Garner, 2009). The additional knowledge gained within this study can be used to enhance ongoing conceptual discussions relating to ORC, at least in the context of healthcare services, and possibly further afield.

The quantitative aspects of this study considered the relationship between ORC and change adoption separately from client engagement and these studies used both individual and service level assessments to explore aspects of community treatment prescribing services. It is notable that within the qualitative exploration, staff did not consider organisational attributes which supported change adoption and client engagement to be mutually exclusive. From a staff perspective, aspects of service functioning such as client engagement and change adoption and the service attributes which supported them, such as resources, supervision, training and team cohesion were shown to be interdependent (Kelly, 2021c). In fact, staff discussed the concepts of training adoption and client engagement, and the organisational attributes which support them interchangeably. This supports a hypothesis that, when compared, the factors which determine innovation adoption and client engagement are similar (Louie et al., 2021, Kelly et al., 2018). Meeting service user needs more effectively, either immediately *or* over a time period, also required staff and services to change, and involved a range of internal, external, individual, and process related factors (Kelly, 2021c). As change is both continuous *and* dynamic, assessing ORC and related factors as a 'general state of affairs' in an organisation provides useful information. This is true, irrespective of the continued conceptual discussion relating to ORC.

The two systematic reviews presented in this thesis helped to identify that no studies had established how to address organisational deficits as measured by ORC once these had been identified. Qualitative data included in this thesis has addressed at least some of these knowledge deficits. These findings provide at least some points of consideration for managers, planners and policy makers in terms of '*what needs to be done'* to address organisational deficits (Kelly, 2021c). If utilised, specific findings here such as those on resources, leadership, supervision,

communication, job roles, team cohesion, and governance will build on important information for planners and policy makers when designing and planning services. Despite the new knowledge discussed in this thesis, how we can best address organisational deficits in substance misuse services is something about which significantly more knowledge is required. Addressing deficits of knowledge in this area and acting upon these, has significant potential to positively impact on service users, staff and wider society (Van de Ven et al., 2020, Aiken et al., 2014). Research involving ORC measurements provide a good basis for this to be accomplished.

8.3 Overview of findings relating to client engagement

The four client engagement scales used in this study, developed initially for the US context, also showed comparable means to those from studies conducted in the US, an overview of which is provided in Table 8. 3 (Kelly, 2021b, Institute of Behavioral Research, 2007). Irish participants had marginally higher scores for treatment satisfaction and peer support but a notably lower scores for peer support, with a 5-point difference between means. This may be reflective of the fact there is more emphasis on group counselling or group work in the US treatment services.

Table 8. 3 Client engagement; comparison of Irish and US mean scores using the TCU treatment engagement tool (Joe et al, 2002)[17]

Domains	**n=(Irish sample)**	**Irish sample mean[17]**	**US sample mean (n=8,933)[18]**
Treatment Participation	262	40.72	40.9
Treatment Satisfaction	262	40.77	38.4
Counseling Rapport	261	42.19	40
Peer Support	262	31.99	36.7

Client engagement in this study was considered to be an interdependent *'dyad'* between the service and the service user (Dixon et al., 2016). However, it was identified that factors which determine how effectively a service and a service user can effectively engage, go beyond the perimeters of this *'dyad'* (Kelly, 2021b, 2021c). Demographic characteristics of service users such as accommodation stability, educational levels and length of time in treatment are important. Service users who were longest in treatment had less favourable engagement ratings, a finding which is not consistent with studies in other jurisdictions (Broome et al., 2007). In staff interviews included in this study, staff described a transformational 'shift' in the ethos of services over time where services were more punitive and used to 'wrestle' with service users, but now make more effort to 'meet people where they are at'. It is possible that the views of services of those who are longest in treatment may have been forged at a time when services were less service user friendly, resulting in a sense of '*institutional stigma'* (Woo et al., 2017). This is a hypothesis supported by recent research on long-term service users conducted in the Irish community prescribing services which

[17] KELLY, P., HEGARTY J., DYER KR., O DONOVAN A., 2021b. Organizational attributes and client engagement in community opiate substitute prescribing services. Cork, Ireland: University College Cork.
[18] INSTITUTE OF BEHAVIORAL RESEARCH. 2007. *TCU Treatment Engagement (TCU ENGForm)* [Online]. Fort Worth: Texas Christian University, Institute of Behavioral Research. Available: ibr.tcu.edu [Accessed 08-06 2020]. https://ibr.tcu.edu/forms/client-evaluation-of-self-and-treatment-cest/

identified a range of adverse legacy issues for this 'longest in treatment' group, based on poor staff attitudes and practices around the prescribing of OST (Mayock and Butler, 2021a).

Qualitative inquiry in this study also identified that a service-users experiences of treatment and its effect on engagement may extend beyond experiences of just one service and is also determined by an overall planning strategy (Kelly, 2021c). A service user is likely to be engaged with a multitude of inter-connected agencies, for example housing, criminal justice or social welfare and within drug treatment services may be transferred between agencies under the same management structures. In this context, in order to assess the determinants of this 'dyad', further consideration of what constitutes an organisation is required. Policy makers and planners should consider these organisations not as entirely separate entities but as a collection of '*loosely coupled systems'* (Hollenbeck and Spitzmuller, 2012, Orton and Weick, 1990). Overall, engagement should be considered as a phenomenon which exists and is determined by service users experiences across multiple agencies. Services and service planners need to collectively identify and learn to adopt to the individual characteristics and needs of service users across a range of interconnected services, in order to enhance engagement and treatment outcomes (Doyle and Ivanovic, 2009).

8.4 Overview of findings relating to innovation adoption

Innovation adoption was described in this study as a process where staff become aware of an innovation and utilised information with which to make a decision to adopt to change or not (Wisdom et al., 2014). An innovation was initially considered to be something which was identified as a part of training, or a planned organisational change. However, qualitative inquiry demonstrated a wider application of training in that it can be adopted for its own purpose and/or

as a component of a much broader organisational change (Kelly, 2021c). In addition to this, qualitative data showed that service innovations are adopted more immediately in order to respond to service user needs, such as responses to emerging drug trends, or increases in presentations of child protection cases. In practice, these responses, such as supporting dual diagnosis clients or responding to new drug trends, were also identified as being underpinned by specific training activities (Kelly, 2021c). Overall, these findings are supported by theoretical frameworks which describe organisational innovation [or change] adoption occurring on a multitude of levels, and incorporating different types of change such as evolutionary, revolutionary, planned and unplanned (Porras and Robertson, 1992).

Training scales from the SOF tool have been used in a limited number of US studies and only one identified study reported mean values for the training scales (Joe et al., 2007). Table 8. 4 provides an overview of US and Irish training adoption means scores. In this case the Irish mean scores for training exposure was significantly lower, while both individual and service wide utilisation were marginally lower than those recorded by their US counterparts (Kelly, 2021a). Program level utilisation scores were also notably lower in the Irish sample but the reason for this is not clear.

Table 8. 4 Training adoption; comparison of Irish and US mean scores from SOF tool[19]

Training Exposure and Utilisation	n= (Irish)	Irish mean scores[19]	*US Mean scores[20] (n=1047)
Training Satisfaction	127	29.2	30
Training Exposure	131	22.0	31
Training Utilisation - individual level	122	30.8	34
Training Utilisation - program level	126	27.3	31

*These scores using the same SOF tool (Joe et al, 2007) have been rounded up by ten for the purposes of cross comparison

Further findings in this study also supported those from other studies which identified that staff with more education, who were longer in post, were more likely to be able to support the process of innovation adoption (Kelly, 2021a, Lehman et al., 2012a, Lundgren et al., 2011b). Some staff groups in the Irish seting, such as counsellors, were also more likely to adopt new practices (Kelly, 2021a). A possible explanation offered for this was the provision of supervision resources for this group and not others, where supervision was a space where staff could reflect on the implementation of new techniques (Kelly, 2021c). Other staff factors which supported or inhibited innovation adoption such as an 'ideological' disposition towards addiction or higher belief in the efficacy of an intervention which were shown to be important, are consistent with recent empirical literature on implementation science in drug and alcohol settings (Louie et al., 2021). These findings provide important points for the consideration of planners when recruiting and supporting staff and designing and resourcing services.

[19] KELLY, P., HEGARTY J., DYER KR., O DONOVAN A., 2021a. An exploration of organizational characteristics and training adoption in Irish community drug treatment services. Cork, Ireland: University College Cork.
[20] JOE, G. W., BROOME, K. M., SIMPSON, D. D. & ROWAN-SZAL, G. A. 2007. Counselor perceptions of organizational factors and innovations training experiences. *Journal of Substance Abuse Treatment,* 33**,** 171-182. https://ibr.tcu.edu/forms/organizational-staff-assessments/

8.5 Relationship between ORC and innovation adoption

Exploring the relationship between ORC and innovation adoption was one of the primary aims of this study. Heterogeneity in the study designs included in the systematic reviews rendered direct cross comparison of results challenging, but there were similarities between some US studies and results from primary research studies included in this thesis. For example, the relationships between innovation adoption and ORC domains such resources, staff attributes and pressures for change were comparable (Kelly, 2021a, Courtney et al., 2007, Fuller et al., 2007). Organisational climate across all six sub-domains were identified as having an association with innovation adoption across US studies, and while only mission clarity and openness to change was associated with training adoption scales, this was not reflected in the Irish context (Kelly, 2021a, Kelly et al., 2017). Overall, in services where staff provided more favourable assessments of ORC, these services were better able to support a process of innovation adoption, but there has been a notable absence of qualitative inquiry, interventional studies or retrospective inquiry and little indication of how to address ORC deficits once they were identified (Kelly et al., 2017).

In this thesis, much of the data obtained in the qualitative inquiry relates to relationships identified in quantitative inquiry, even if discussion was not explicitly related to a specific ORC sub-domain (Kelly, 2021c). For example, services with better resources, such as training resources, staff resources and access to e-communication were more likely to be able to support the process of training adoption (Kelly, 2021a). Staff when interviewed, spoke about the importance of staff resources in the context of how recruitment and retention impacts on change adoption or how supervision resources helped to facilitate training adoption through reflection and discussion (Kelly, 2021c, De Vries et al., 2016). Staff also identified that the provision of supervision

resources as something which helped reduce ‘burnout’, which in practice has as a direct relationship with stress (Kelly, 2021c, Pollock et al., 2017, Landrum et al., 2012). In conjunction with this, in multivariate analysis, stress was shown to have a negative relationship with individual training adoption, a finding which is supported in other areas of healthcare (Kelly, 2021a, Qiao et al., 2021).

In the qualitative inquiry, the importance of training was emphasised by staff as a critical component of wider change adoption process, for example universal dispensing of naloxone, and was also considered to be an important facilitator for organisations to support the adoptions required for both planned and unplanned change (Kelly, 2021a, 2021c). The important role of training as a component which supports wider organisational change is something which concurs with wider implementation literature (Carlsson and Wadensten, 2018). In the case of Irish treatment services, appropriate dispensing of naloxone is an important life-saving initiative in which training, stress, and staff support all play a part. These are not the types of relationships, mechanisms or phenomena which can be identified through quantitative or qualitative inquiries alone (Tashakkori and Teddlie, 2010).

In addition to this, sub-domains measured in the quantitative inquiry which did not reach a level of statistical significance within the multivariate analysis, for example communication or team cohesion, were identified as organisational attributes that were considered to be important by staff in supporting innovation adoption when they were interviewed (Kelly, 2021a, 2021c). This demonstrates some consideration by participants that organisational aspects such as team cohesion and communication could be improved through hosting more inclusive multi-disciplinary

meetings, or by ensuring that certain staff groups work more consistently and less in 'silo's' through more standardisation of practices in organisations, and across disciplines. As a state-based assessment, ORC measurements are not designed to capture organisational aspects such as changes in service ethos over time to 'meet people where they are at', nor are they designed to retrospectively capture some of the social, policy and leadership trends which drove these changes over time (Kelly, 2021c).

The attributes of staff were also important, in services where staff felt that they had more personal influence and more growth opportunities, they were also more likely to support the process of training adoption (Kelly, 2021a). In services with greater opportunities for growth, staff also identified that there were greater training resources, indicating a possible relationship between these sub-domains. The interview participants did not specifically talk about growth opportunities or personal influence but some participants expressed frustration at their skills not being recognised and being excluded from meetings, while other staff spoke favourably about a diminishing 'authoritarian' style within services (Kelly, 2021c). These are all factors which may relate to the levels of personal influence felt by staff. The relationships identified with these particular sub-domains such as influence and autonomy, and experiences described by staff, relate closely to an 'umbrella term' known as *employee empowerment* (Woodward, 2020). Empowerment is influenced by number of factors, including the characteristics of an individual staff member, such as education levels and tenure in post but is also determined by organisational factors which promote developmental opportunities and the independence of employees within a supportive organisational structure (Siekkinen et al., 2021, Halvorsen et al., 2020).

Given other results in this study, the hypothesis that more educated staff, who are longer in post, who also have better computer access are likely to feel more influential with their peers is valid and is worthy of further investigation. These are characteristics of staff which are considered important in determining support for innovations but have not been explored extensively in substance misuse treatment services (De Vries et al., 2016). Similarly, the quality and appropriateness of training should be explored as those who rated themselves as having greater efficacy also reported lower training satisfaction (Kelly, 2021a, Markaki et al., 2021). Although it was not identified as an overall theme or category in the qualitative inquiry, two staff expressed general concern during interviews with the quality or mode of training provided (Kelly, 2021c). In order to ensure adoption of innovations, matching training with staff skills and educational deficits is important. In this context undertaking a detailed training needs analysis is recommended prior to delivering training, as well as giving due consideration to how training can be delivered effectively (Markaki et al., 2021).

Finally, in services where staff identified; higher programme needs, specific training needs and greater pressures for change they also reported poorer training adoption (Kelly, 2021a). This supports findings from other studies which identify that higher programme needs have been associated with greater motivation to change, but less opportunities to do so (Lundgren et al., 2011b, Rowan-Szal et al., 2007). Again, more effectively resourced services, with lower needs are more likely to be able to more effectively implement new practices (Kelly, 2021a).

8.6 Relationship between ORC and client engagement

The ORC tool conceptualised by Lehman et al. (2002) was initially developed to advance the process of technology transfer, but has shown versatility and has been successfully shown to relate to a number of organisational outcomes, including client engagement (Greener et al., 2007). In a number of US studies, ORC has since been shown to relate to a range of client related outcomes, is predictive of better service user/staff relationships, reduced substance misuse, and better treatment engagement (Kelly et al., 2018). More favourable ORC ratings across all domains have been previously associated with a services ability to engage service users (Kelly et al., 2018). Similar to innovation adoption, all ORC domains related to client engagement and the organisational climate domain appears most significant in terms of predicting better engagement with service users (Kelly et al., 2018, Kelly et al., 2017).

Collinearity between organisational climate sub-domains in this study did not allow for complete multivariate analysis relating this domain to client engagement in the study reported on in this thesis. However, final analysis did show that in services where staff reported having greater autonomy, those services had significantly higher ratings across three engagement scales; participation, satisfaction and counselling rapport (Kelly, 2021b). These results support those from studies conducted in the US, where higher staff autonomy was also associated with better rapport with staff and greater treatment satisfaction (Greener et al., 2007, Lehman et al., 2002). No relationships were found between ORC and peer-support in the study reported in this thesis and these were also either not reported in other papers, or not investigated (Kelly, 2021b, Kelly et al., 2018).

Job autonomy within healthcare is thought to be of significant importance and is thought to be strongly related to the climate of the organisation that the individual operates in (Havermans et al., 2017). Poor job autonomy has been shown to contribute to lower job satisfaction, higher stress and burnout, something which has negative implications for the wider organisation and patients (Van Dorssen-Boog et al., 2020, Havermans et al., 2017). Conceptually at least, job autonomy, professional influence and engagement [feeling connected with ones work] are components of, and are closely linked to the wider concept of employee empowerment (Woodward, 2020). Higher employee empowerment in turn has been related to more job satisfaction, lower burnout and less staff turnover (Lamiani et al., 2017, Choi et al., 2016). Employee empowerment is thought to be determined by structural aspects of an organisation which is often referred to as '*structural empowerment*' which is determined by access to; *resources, support, opportunity and information* (Abel and Hand, 2018).

Autonomy [or influence with peers in training adoption study] was not explicitly identified within the qualitative data as being something of key importance to employees (Kelly, 2021c). However, many of the recognised structural determinants of empowerment and autonomy were discussed by participants, for example *resources* [buildings, staff], *support* [management style, supervision, team meetings] *opportunity* [career progression, skills utilisation] and *access to information* [through; better communication, training, supervision, peers, service users] as well as recruitment and retention were all important components of the sub-categories and themes within the qualitative data. From a service managers perspective, many of the factors identified such as meeting structures, implementation of policy and other improvement in governance are modifiable, and therefore amenable to intervention without necessarily incurring any significant

additional cost to the organisation. The evidence presented in this thesis demonstrates that there is a significant likelihood that specific and cost-neutral actions by healthcare managers in their organisations will improve employee wellbeing and also have a likely benefit on service user outcomes and also adoption to change (Kelly, 2021b, 2021c). In terms of having potential for an immediate impact on services, these are important findings in this thesis. Improvements to aspects such as clarity of mission goals, relationships, staff autonomy and communications and assessment and change of leadership styles are some examples of where improvements can be made without incurring additional costs (Vaughn et al., 2019). Locally, the first stage of this should involve an appraisal of organisational functioning and close consideration of how service users can become directly involved in or fully co-produce service improvements, something that is in keeping with national policy but is not yet evident in the context of Irish treatment services (Batalden, 2018, Department of Health, 2017a).

Paradoxically, while staff job autonomy and staff empowerment has positive benefits for an organisation, staff also identified that individuals acting autonomously and breaking team decisions or other staff feeling unable to utilise their skills had a detrimental impact on service users and staff (Kelly, 2021c). Equally, while diversity in skill mix was viewed as something which supported change, helped engagement to 'meet service users where they are at', differences between professional groups, for example in relation to prescribing practices or supervision was considered to be detrimental to supporting change, meeting service user needs and adversely affected cohesion between team members (Kelly, 2021c). This supports the argument that autonomy or staff diversity in itself are not an end goal, but the structural context in which they occur is of equal or greater importance (Abel and Hand, 2018). How planners and service managers

can maintain this balance is a challenge, but something which is likely to include improving the overall governance in services (Veenstra et al., 2017).

The objective of the qualitative study was not to examine the relationship between ORC and client engagement, but staff identified several organisational attributes which related to how effectively services can engage service users (Kelly, 2021c). The characteristics of staff, being empathetic and non-judgemental were seen as important staff traits for engaging service users. Meeting service user needs was seen as a key driver for organisational change and staff frequently framed the performance of the service or the outcome of a change process in terms of how it benefitted service users. Resources, such as buildings were thought to 'send a message' to service users about their value, while the provision of supervision, training and were considered to be vital in helping clients. Structures around prescribing practices were thought to result in inequitable treatment for service users and create management difficulties for staff. These were not specifically identified under the ORC domains in the quantitative study but factors that relate to engaging service users which are important (Kelly, 2021b, 2021c, Mayock and Butler, 2021b).

8.7 Limitations and strengths

This study supports the generalisability of results from much larger cross-sectional studies conducted in the US to the Irish context. Although they do not typically identify causal relationships, and are considered low in terms of evidential hierarchy, cross-sectional surveys are still a suitable method for evaluating services provide useful information (Cottrell et al., 2012). It is also appropriate to choose a specific type of mixed method study design on the basis of the research question, the resources available and the skills of the researcher (Creswell, 2013). Using a concurrent mixed methods study design was appropriate for the aims and objectives specified

for this study. This does not mean more large-scale interventional studies, studies which include a more detailed analysis of organisations; size, skill mix, economic aspects as well as service user complexity are not required (Kelly et al., 2017, Aiken et al., 2014). Studies which incorporate the economic benefits of providing treatment to people who use drugs have been shown to be particularly beneficial in terms of influencing an appropriate policy and treatment response (Gossop, 2015). Building on previous studies, this study still provided new and useful information for planners and policy makers in an area about which little is known, especially in the Irish context. While the qualitative aspect of this study provided data which enriched the quantitative data, the sample size of staff imposed some restrictions on multivariate analysis but this was accounted for through a 3-stage modelling process that was clearly outlined. While the sample is geographically diverse, a convenience sample taken from available services was used and thus data may not be representative of the staff or service user population as a whole. Ethical approval was also granted on the basis that anonymity of participating services and individuals was ensured; thus it was not possible to use linkage data between individual staff and service users, or to describe specific service attributes in more detail.

8.8 Recommendations

Some recommendations have already been made in this chapter and others for service managers, such as conducting inclusive meetings, providing supervision and resources, and how they can support innovation adoption. There are some additional recommendations for policy and practice which should be explored. A summary table of desired outcomes and associated recommendations based on the analysis of study findings, empirical literature and assessment of Irish policy already discussed in this thesis is provided in Table 8. 5. It is important to observe that these outcomes and recommendations are interdependent and should not be considered in isolation.

The Irish National Drugs Strategy (Department of Health, 2017a) commits explicitly to promoting research and using evidence to inform policy and practice. The policy also commits to a 'systems approach' to providing treatment which is underpinned within the strategy with a commitment to implement a 4-tiered approach to delivering services as described by the [NDRIC] national rehabilitation framework (Doyle and Ivanovic, 2009). This framework, which is in keeping with international best practice, also proposes a system involving documentation and reporting by staff where 'blocks and gaps' within and between services are identified and rectified. Anecdotally, it has been identified that employment of regional leads for the implementation of this framework has been sporadic and inconsistent. Given significant inconsistencies in service provision identified, it is also unclear if the current structures of drug task forces are the appropriate model to deliver services and this should be reviewed. The findings in this study support the argument that the implementation of the NDRIC is very much a work in progress. The implementation of this framework should be prioritised in order to improve services and integrated working between services but policies to improve integration and structures of services should be expanded beyond the NDRIC framework.

The Irish National Drugs Strategy also makes an explicit commitment for the implementation of standards of governance but identifies the national Health Service Executive [HSE] as the body responsible body for the implementation of these standards, a body which is also responsible for commissioning and funding services (Department of Health, 2017a). The HSE is not an independent health regulator and given the potential conflict of interests between providing funding for services and subsequent oversight of standards within these services, substance misuse treatment services in Ireland should be subject to independent regulation and inspection, as per

other healthcare services in Ireland and substance misuse services in other jurisdictions (Care Quality Commission, 2021, HIQA, 2018).

Ireland is consistent with other European countries in that workforce development and long-term workforce planning is not explicit within its national drugs strategy (EMCDDA, 2021b, Department of Health, 2017a). As an appropriate starting point, Ireland does not have any existing data on the current addictions' workforce, nor does it have a current 'map' of service provision. If Ireland and other countries are to utilise existing resources effectively and provide appropriate services for future demands, then taking a 'whole-systems' workforce development approach is imperative, and this includes assessing the current workforce and services (Roche and Nicholas, 2017). Internationally, it appears that example can be taken from Australia, where there are existing workforce development strategies for the addictions workforce (Intergovernmental Committee on Drugs, 2014b). Recent work has been undertaken in 'mapping' the existing workforce nationally (Searby, 2020, Skinner, 2020). In order to support a systemic approach to workforce development, it is imperative that European countries follow this example.

It has been identified that the ORC tool developed by Lehman et al. (2002) has received little modification since it has been developed, despite invitations from the tool developers to do so (Kelly et al., 2017). This ORC instrument appears to have good generalisability for contexts outside the US, but studies included in this paper indicated that there are some concerns around reliability (Kelly, 2021a, Simpson et al., 2009, Rampazzo et al., 2006). The large number of subscales and items necessitate larger sample sizes in order to generate appropriate statistical power, which is challenging in countries with smaller workforce populations (Coolican, 2014). In the era of increased access to e-communications and mobile computer access, some of the sub-

domains within the ORC tool are less relevant. Consideration should be given for updating and modification of this tool, while preserving its utility.

Still, in substance misuse treatment services, little is known about what to do about organisational deficits once they are identified in practice areas and more research is required in this respect (Kelly et al., 2018, Kelly et al., 2017). In this regard, experimental or sequential mixed methods designs may provide an appropriate framework. It was also identified that assessing ORC in conjunction with other variables such as service size, skill mix, financial aspects would provide much richer data for planners and this is still the case. In this context, it may be worth examining approaches used in influential longitudinal studies such as those conducted by Aiken et al. (2014) and Ausserhofer et al. (2014) which explored the relationship between staffing skill mix, competencies and client outcomes in general healthcare settings. In the absence of resources for such large-scale studies, developing a consensus on the terms used and on methodological approaches for observational studies on the relationship between organisations and client outcomes or innovation adoption would be appropriate. A consensus approach in research which would enable cross comparison of results across studies and jurisdictions is something which has already been recommended in the field of implementation science (Louie et al., 2021). Given the difficulty in cross-comparing ORC results due to the heterogeneity of studies, recommending such a consensus approach should also be considered in the event of updating the ORC tool. In order to encourage government investment in services, it would also be useful to perform a cost/benefit assessment of providing treatment, which in other jurisdictions have shown that investing in drug treatment services provide significant cost savings across other public services (Godfrey et al., 2004).

Table 8. 5 Recommendations for Policy, Practice & Research*

Outcome (s)	Recommendation
1. Provide consistent standards of care within and across OST and other drug treatment services 2. Ensure equality in treatment and equal access to treatment	• Full implementation of existing strategies; NDRIC & National Drugs strategy • Establish external and fully independent regulation/inspection of services • Revise the role of prescribers and aspects relating to their role: use of sessional prescribers, clinical guidelines for OST, training for prescribers, and overall governance, legislate for nurse prescribing of OST • Introduce a case management system nationally- using nursing staff or other suitably qualified professionals as keyworkers • Include service users and staff in the planning and design of services
3. Create sustainable organisations and a sustainable workforce and 1,2	• Develop a national workforce development strategy- consider; (i) mapping treatment services & staff nationally (ii) base the provision of services and staff on population needs, drug trends etc (iii) pay, conditions and progression for staff and impact on recruitment and retention
4. Ensure that innovations are adopted consistently	• Planners should increase consideration of the organisational context before implementing change; i.e. by measuring or assessing variables measured by ORC before implementing a specific change • Adoption should be considered as a process as opposed to a single training event • Suitability of training and innovations for specific context should be considered; e.g. team communication, resources, leadership, supervision, 'matching' training or change to staff efficacy, clinical audit • Consider suitability of specific innovations; in the context of implementation strategies; e.g. provision of adequate resources, providing exemplars of change • Identify influential staff, opinion leaders and key stakeholders in services and work with them to implement change
5. Service managers adopt practices to improve organisational functioning	• Improve structural empowerment [staff influence and autonomy] through improved governance; e.g. audit, supervision, implementation of policies • Ensure equal access to supports for all staff • Hold staff meetings with all members of MDT present • Involve service users and staff in the planning and organisation of services • Reward staff- e.g. social events, food etc.
6. Expand knowledge on how to address organisational deficits	• Use ORC measures to identify organisational deficits • Measure other organisational attributes in conjunction with ORC- e.g. skill mix, service location/size, research affiliation, caseloads • Quasi-experimental, longitudinal or interventional studies which identify causal relationships measured by ORC and (i) engagement (ii) innovation adoption • In the absence of resources for interventional or prospective studies, utilise qualitative research to allow for retrospective or prospective inquiry
7. Expand knowledge of how services can improve client engagement and overall outcomes	• As above • Comprehensive studies which assess aspects of treatment provision such as staff and organisational variables, service user complexity, individual relationships are required
8. Complete an economic evaluation of OST services with a view to supporting policy	• Complete a 'value for money' assessment of treatment provision in terms of expenditure on staff, and direct and indirect cost savings • Findings should inform a variety of national strategies including development of sustainable organisations and the workforce
9. Update ORC measures	• Develop a standardised measure for contemporary drug treatment services which can be utilised in multiple contexts • Consider developing recommendations around methodology, use of language etc in order to avoid heterogeneity, ensure consistency and build knowledge base across jurisdictions

*Recommendations are included where they are considered to most closely relate to an outcome. All recommendations and outcomes are considered to be interdependent components of a 'whole systems' approach.

8.9 Conclusion

This thesis provided an overview and critically discussed the context of substance use and policy and the development of treatment services in Ireland. The objective of describing both the complexities, benefits and context of providing treatment to people who are dependent on opiates was accomplished. An overview of the importance of considering workforce and organisational factors was provided, and an adequate justification was provided for measuring, at an organisational level, how effectively national policy and evidence-based practices relating to people who use drugs, organisations, and staff are implemented. Providing a strong theoretical and conceptual foundation for this study helped to conceptualise organisations, organisational change, informed the study design, and was invaluable in terms of interpretation of data, synthesis and analysis throughout this thesis. Conducting two systematic reviews identified gaps in the literature relation to ORC and innovation and service user engagement and formed the basis for a study design which was reported here as three separate scientific papers. Like the systematic reviews, these three papers make valuable contributions to the knowledge base on an important and complex subject area about which little is known.

Key findings in this study identified that staff perceptions of organisations are important, and when they are considered in conjunction with other variables, they can provide us with valuable information for planning and delivering services, and for future research. Organisations which facilitate staff autonomy in the context of appropriate governance and support are more likely to engage service users more effectively, although the characteristics of service users and their social circumstances also affect their willingness or ability to engage. Similarly, staff who are more educated, longer in post and/or who feel more influential in their workplace are more likely to

adopt new innovations. Where staff perceived their services to be poorly resourced they also reported fewer opportunities to train, while staff with higher levels of stress are less likely to adopt innovations. Aspects of services such as team cohesion, supervision and support, and a services ability to recruit and retain staff are interdependent and are also likely to influence a services ability to innovate or meet service user needs. Many organisational deficits identified here could be addressed by service managers without an increase in resources.

Using a mixed methods approach has advanced knowledge on the mechanisms which underpin relationships between ORC, staff and service user characteristics and important aspects of how organisations work. Knowledge gained within this study can be used to address organisational deficits which will help to improve client engagement, promote the adoption of new innovations into practice and create a more sustainable treatment system. This new knowledge is not confined to exploring phenomena or relationships which exist in this context of Irish community-based opiate treatment prescribing services, some of which is generalisable to other jurisdictions. Analysis provided relating to the conceptual methodological approaches used in this study will be useful to future researchers in this area. Overall, this study provides sufficient evidence to justify a 'whole systems' approach to developing the workforce and treatment services in Ireland and beyond. Organisations, staff and their training should not be considered in isolation from each other, but more work, including research, is required to instil this argument in the consciousness of key decision makers.

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Appendix 1 Permission to Use Figures 2.1, Figure 2.2, Figure 2.4 and Figure 2.5

Appendix 1. 1

[email address omitted]

Dear Peter

Thank you for your email requesting permission to use [omitted] materials.

In terms of your query, yes permission is hereby granted to use [name omitted] materials in your thesis with the appropriate referencing.

Kind regards

From: Kelly, Peter
Sent: Friday, 23 April 2021 12:15 AM
To: [omitted]
Subject: Request for permission

Dear [omitted],

I was hoping to use some of your materials in my PhD thesis, a few graphs, diagrams etc. Of course, I will reference these as appropriate, but my understanding is that I need your permission to include these in my final thesis. Before you respond, I have also been advised that a copy of your response will need to go into the appendix of my thesis. Thank you in advance.

Kind Regards,

Peter

_____

[email address omitted]

Thu 03/06/2021 14:00

To: Kelly, Peter

Cc: [e-mail omitted]

[EXTERNAL] This email was sent from outside of UCC.

Hi Peter. Yes of course you are welcome to reprint and use it in any way it can be helpful. Best wishes for your work.

[omitted]

Sent from iPhone

On Jun 3, 2021, at 5:09 AM, Kelly, Peter wrote:

Dear [omitted]

I would like to ask your permission to use the Fig. 1. Program change model for transferring research to practice diagram from the paper: 'Simpson, D.D., 2002. A conceptual framework for transferring research to practice. *Journal of substance abuse treatment*, *22*(4), pp.171-182.' in my PhD thesis. Of course, the diagram will be referenced appropriately.

I am conscious that you are now retired and I have copied in [omitted] to this email, in the event that he may be able to grant me permission to use the diagram in the event that you are not in a position to respond to this email.

Many thanks in advance.

Kind Regards,

Peter

[email address omitted]

Thu 03/06/2021 14:14

To: Kelly, Peter

[EXTERNAL] This email was sent from outside of UCC.

Hello, Peter. You have my permission to do so. You might check the journal's instructions to see if any other permissions are required. Best of luck with your dissertation.

[name omitted]

From: Kelly, Peter
Sent: Thursday, June 3, 2021 2:41 AM
To: [name omitted]
Subject: Request for permission to use ORC diagram from your paper in PhD thesis

Dear Professor [name nomitted]

I am about to submit my PhD thesis titled 'A mixed methods study exploring the relationship between organisational readiness to change, client engagement and innovation adoption in Irish community opiate prescribing services in Ireland'.

I would like to use Figure 1 Determinants and Outcomes of Organizational Readiness for Change diagram from the paper titled: 'Weiner, B.J., 2009. A theory of organizational readiness for change. *Implementation science*, *4*(1), pp.1-9.' in my thesis.

Please can I obtain your permission to do so?

Kind Regards, Peter

Appendix 2 Permission to use Figure 2.4 and ORC and Client Engagement Questionnaires

Appendix 2. 1

[email address and name withheld]

Thu 15/11/2018 15:06

To: Kelly, Peter

Cc: [name and email address withheld]

Peter

It is good to hear from you and that you are moving forward on your data collection. As we have discussed in the past, you have permission to use the SOF and CEST tools for your research. Here is our permission to use policy from our web site that allows you to use forms and interventions:

Permission to Use TCU Resources [Taken directly from publicly available website]

The Institute of Behavioral Research at Texas Christian University is pleased to make available, without charge, a wide array of resources, including forms, evidence-based mapping guides, and interventions. Collectively, they are referred to as the "TCU Resources."

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You are also free to make amendments to the language to fit the context of the target population, of course with the caveat that such changes may change the reliability and validity of the results, depending on the type and magnitude of the changes.

Good luck with your data collection and feel free to contact us with any other questions. And have a great holiday.

[name withheld]

Appendix 3 A Systematic review 1: The relationship between staff perceptions of organisational readiness to change and the process of innovation adoption in substance misuse treatment programs

Appendix 3. 1

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Journal of Substance Abuse Treatment

A systematic review of the relationship between staff perceptions of organizational readiness to change and the process of innovation adoption in substance misuse treatment programs

Peter Kelly [a,*], Josephine Hegarty [a], Joe Barry [c], Kyle R. Dyer [b], Aine Horgan [a]

[a] School of Nursing and Midwifery, Brookfield Health Sciences Complex, University College Cork, Ireland
[b] Institute of Psychiatry, Psychology and Neuroscience, Kings College London, 4 Windsor Walk, Denmark Hill, London SE58BB, United Kingdom
[c] Department of Public Health and Primary Care, Trinity Centre for Health Sciences, Trinity College Dublin, Dublin 2, Ireland

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ABSTRACT

Translating innovation, such as contemporary research evidence, into policy and practice is a challenge, not just in substance misuse treatment programs, but across all spheres of healthcare. Organizational readiness to change (ORC) has been described as a fundamental concept, and an important determinant of the process of innovation adoption. The aim of this review was to describe the relationship between staff perceptions of ORC and the process of innovation adoption: exposure, adoption, implementation and integration into practice, in substance misuse treatment programs. This systematic review was conducted in accordance with PRISMA guidelines and fourteen papers were identified as being eligible for inclusion. This review was designed to include all constructs of ORC, but only one tool was used in all of the included papers. Despite this, the heterogeneity of studies in this review made a direct comparison of ORC related variables challenging. None of the included papers clearly related to one stage of the process of innovation adoption, and all of the included papers related to the early stages of the process. Only one paper attempted to measure the sustained integration of an innovation into practice. Overall, the papers were assessed as being low in terms of evidential hierarchy and the quality of the papers was assessed as being on average fair. ORC measurements provide us with a measure of organizational functioning which can be important in terms of predicting how successfully new innovations are adopted. Motivation for change was high in programs where staff identified more program deficits and these staff could also identify more specific needs, but were less likely to have exposure to new innovations. Better program resources and specific staff attributes, increase the likely hood of successful innovation adoption. A good organizational climate is potentially the strongest predictor for the adoption of new practices. It may be beneficial to measure ORC in conjunction with other variables such as program size, location, staff workloads and financial resources. More evidence is required on how to address ORC deficits once they are identified in practice.

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1. Introduction

Over the last two decades, treatment programs have been challenged by diminishing resources while simultaneously, the scientific foundation on which treatment is based has changed substantially, and the range of substances available and patterns of use have broadened significantly (Barlow, 2010; Roche, 2001;Simpson & Dansereau, 2007). The context in which healthcare organizations operate is dynamic and systems must constantly change to meet demands on resources, adapt to new practices, and respond to significant shifts in policy (Bazzoli, Dynan, Burns, & Yap, 2004). Whatever the nature or stimulus for a given change, if organizations are to respond effectively to rapidly changing and turbulent environments, then engaging successfully with ongoing innovation is essential (Armenakis, Harris, & Mossholder, 1993; Cinite, Duxbury, & Higgins, 2009; Holt & Vardaman, 2013).

Organizational change can be described as any modification in organizational structure, composition or behaviour (Bowditch, Buono, & Stewart, 2008). Managing effective organizational change in healthcare is challenging. Depending on how changes are measured in the healthcare context, the failure rate for implementing change in organizations ranges from 30% to 90% (Jacobs et al., 2015). However, the type of change and the context of organizational change is important as it influences whether or not a change will be successful (Rafferty & Simons, 2006). Failure to implement successful organizational change is frequently attributed to a failure to establish sufficient organizational

* Corresponding author at: School of Nursing and Midwifery, Brookfield Health Sciences Complex, University College Cork, Cork, Ireland.
E-mail addresses: peter.kelly@ucc.ie (P. Kelly), J.Hegarty@ucc.ie (J. Hegarty), joebarry@tcd.ie (J. Barry), kyle.dyer@kcl.acuk (K.R. Dyer), aine.horgan@ucc.ie (A. Horgan).

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readiness to change (ORC) (Kotter, 1996; Rafferty, Jimmieson, & Armenakis, 2013; Vakola, 2013). Conceptualizations of ORC are the subject of ongoing discourse, however in a seminal paper, Weiner (2009, p6) describes ORC as 'a shared psychological state in which organizational members feel committed to implementing an organizational change and confident in their collective abilities to do so'. ORC is interpreted as a multi-dimensional concept involving not only different organizational levels but also cognitive and affective components which can be described in colloqial terms as individuals and/or groups being *willing* and *able* to implement change (Weiner, Amick, & Lee, 2008). Understanding this concept is important, as it has been suggested that a failure to establish sufficient readiness accounts for over half of unsuccessful efforts in organizational change (Kotter, 1996). Conversely, when ORC is favourable, organizational members are more likely to show initiative, work harder and co-operate, which in turn results in more effective implementation and continuation of change (Holt & Vardaman, 2013; Weiner et al., 2008).

In the substance misuse treatment field, there is a paucity of research on the implementation of change and the adoption of new innovations based on scientific evidence (Garner, 2009; Miller, Sorensen, Selzer, & Brigham, 2006). Successful innovation adoption in organizations involves a process, and in order to conceptualize the process of innovation adoption more effectively, it is standard practice for researchers to discuss the process in stages (Garner, 2009). For example, the program change model described by Simpson (2002) describes a four stage model of program change that relates to the adoption of innovations: (i) *training* (e.g. exposure to new innovations), (ii) *adoption* of the new practice (representing a decision taken to adopt and/or to take action to do so), (iii) *implementation* (sustained support for the change effort), and finally (iv) *practice* where the change becomes standard practice. Although the four stages are conceptually distinct, the process in practice is characterised by their interdependence.

In the context of introducing new innovations and change, the characteristics of organizations, which are often measured through staff perceptions, can be an important factor in determining success at each stage of this process (Lehman, Greener, & Simpson, 2002; Lundgren, Amodeo, Chassler, Krull, & Sullivan, 2013). In recent years, the relationship between ORC and the process of innovation adoption has been highlighted by a number of researchers (Gagnon et al., 2014; Simpson, 2002). While it is widely accepted that particular innovations are effective, little is known about the organizational dynamics which can determine how effectively evidence based treatments are adopted into practice. This systematic review will examine empirical papers which examine the relationship between ORC, where is has been operationalized as a distinct construct, and any of the four stages of innovation adoption in substance misuse treatment programs.

2. Methods

A systematic literature search was performed following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analysis) guidelines (see Fig. 1 for PRISMA flow diagram). The search strategy included keywords which related to three search categories: (i) readiness, change, innovation, implementation (ii) organizations, teams (iii) substance misuse treatment. These terms were combined using the Boolean terms AND/OR as appropriate (see Appendix 1: Search strategy)

2.1. Identification of eligible studies

Electronic data bases MEDLINE, PsychINFO, SOCindex and Business Source Complete were searched to identify relevant peer reviewed academic papers published in the English language between 2001 and 2016. Electronic data base searching generated 1770 articles which were added to a reference manager database and after duplicates were removed 1585 articles remained. Two investigators (AH, PK) independently screened all papers by title and abstract and appraised the full text of 29 papers. Reference lists of included papers were also checked for potential papers, and a further 10 articles were subject to full text review, but none of these met the inclusion criteria for this paper. A third reviewer (JH) was available as an arbiter for resolving discrepancies if necessary.

Study designs where organizational readiness to change in adult substance misuse treatment programs was a primary focus were included where they related to any of four stages of innovation adoption; *training*, *adoption*, *implementation* and *practice* (Lehman, Simpson, Knight, & Flynn, 2011; Simpson & Flynn, 2007). Innovation, which involved organizational change, was interpreted as 'the process of developing new approaches, technologies and ways of working' (Kaya, Turan, & Aydin, 2015, p1676). Due to differences in policy frameworks and funding streams, studies aimed exclusively at adolescent or mental health treatment services were not included. Study protocols, studies investigating construct validity or psychometric properties of instruments, theoretical papers and pilot studies; where data pertaining to organizational readiness to change could not be extracted were also excluded. Included papers ($n = 14$) were thoroughly assessed and categorised in accordance with the stage of the innovation adoption process to which they most closely related. Data tables were developed with headings: author, title, country, study aim, study design, sample size, innovation type, instruments and definition of ORC, relationship between ORC and findings, quality assessment and further comments and other key finding. These were designed to incorporate the main findings in the papers and were separated according to the most relevant stages of innovation adoption. A narrative synthesis was conducted using data from the completed tables and important findings from each paper.

2.2. Quality appraisal

Quality appraisal tools in systematic reviews can increase rigour and reduce the risk of bias (Sanderson, Tatt, & Higgins, 2007). Two investigators (PK, KD) independently quality assessed the included papers. The NIH Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies (National Heart Lung and Blood Institute, 2016) was used and the Cochrane Collaboration for assessing risk of bias for RCT's (Higgins et al., 2011) was used to assess the quality of the RCT. The methodological quality of the included studies was appraised based on their scientific rigour and were graded according to fourteen criteria for all papers except the RCT. The criteria assessed rigour in areas such as sample size and population, eligibility criteria, exposures, timeframes and outcome measures. A score was then calculated and the quality of the studies was ranked as either poor (0%) fair (85%) or good (15%). The RCT was assessed as having a low risk of bias.

3. Results

Following a full text review, fourteen papers met the inclusion criteria for this review. Included studies used a number of approaches including cross sectional quantitative designs ($n = 8$), mixed methods approaches ($n = 2$), a randomised control study ($n = 1$), a cross sectional interventional study ($n = 1$), a longitudinal, prospective quasi-experimental study ($n = 1$) and one study described a quality improvement initiative ($n = 1$). One of the studies was conducted in the United Arab Emirates with the remainder being conducted in the United States. The majority of studies focused on staff with only two of the studies incorporating patient measures. Studies were conducted across a range of treatment settings. These settings included out-patient prescribing and non-prescribing programs as well as in-patient detoxification and residential rehabilitation settings. Reflective of an interdependent 4-stage process of innovation adoption, is that most of the included papers did not focus on an individual stage. Of the fourteen eligible papers, six papers focused principally on exposure to training and the adoption of training, while six papers focused principally on adoption and

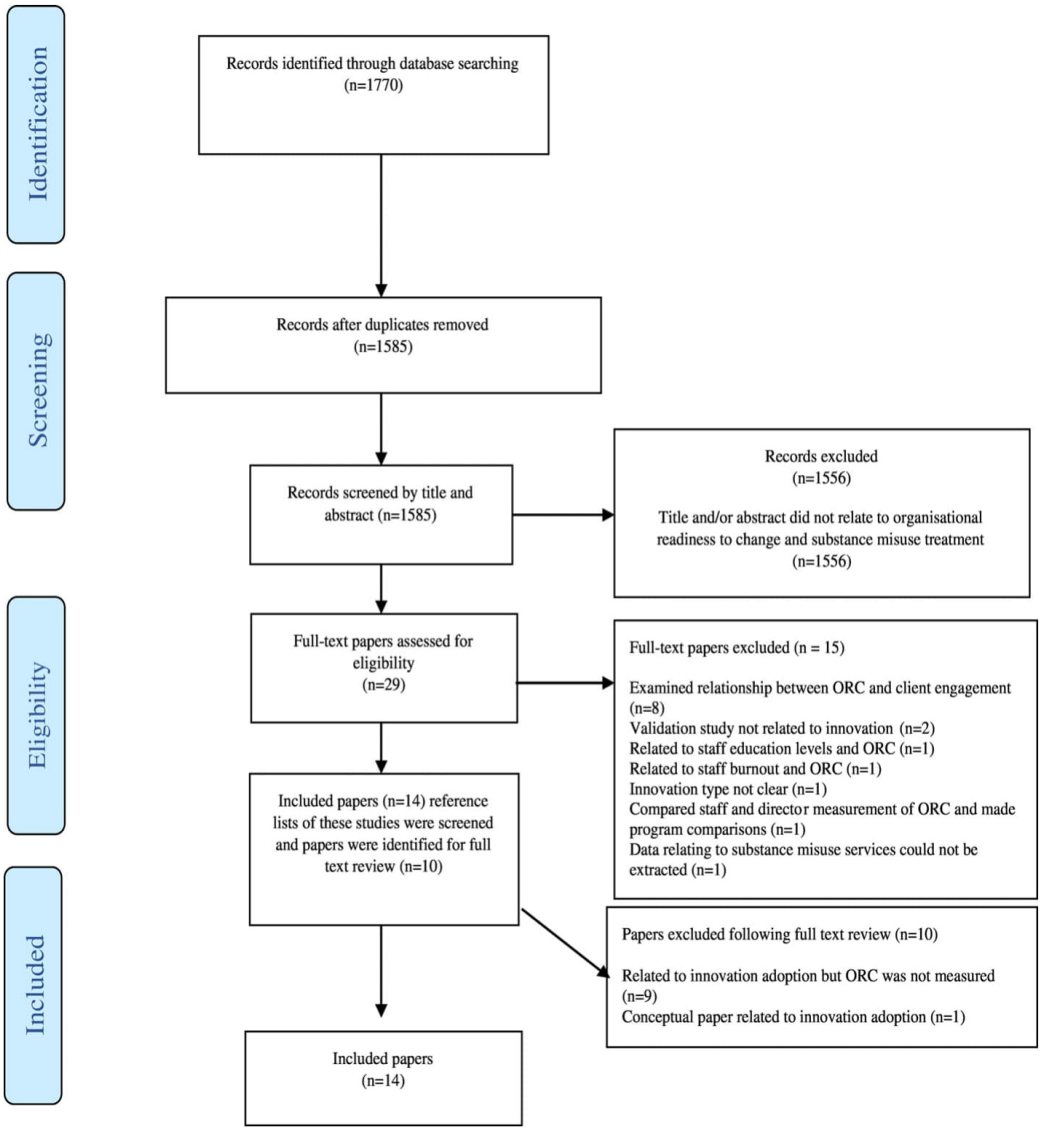


Fig. 1. PRISMA Flow Chart illustrating the search processes and number of included papers.

implementation of specified practices (for which training may already have taken place), while two papers described a process of implementation. None of the studies were suitably structured to measure the final stage of innovation adoption, the sustained integration of an innovation into practice.

This review was designed to include all constructs of ORC where it was operationalized but all fourteen papers measured organizational readiness to change using an ORC measurement tool, or a modified version of a tool developed by Lehman et al. (2002) (see http://ibr.tcu.edu/forms/organizational-staff-assessments/). Although a systematic review of ORC instruments by Gagnon et al. (2014) (n = 26 ORC tools) was not within the scope of this review, the ORC tool devised by Lehman et al. (2002), was shown to have the highest psychometric properties and this provides a good basis for all of the included studies. The ORC assessment tool (Lehman et al., 2002) which is summarized in Table 1, provides a numerical measure of the organizational traits that can influence the adoption and implementation of new practices. This ORC tool has four domains, which include eighteen subscales: (i) *Motivation for change (needs/pressures):* program needs, training needs, pressures for change (ii) *Resources:* Offices, staffing, training, equipment, internet (iii) *Staff Attributes:* Growth, efficacy, influence, adaptability (iv) *Organizational Climate:* Mission, cohesion, autonomy, communication, stress, openness for change. Within the eighteen subscales, this tool includes a total of one hundred and eighteen scaling questions.

A comprehensive summary of all of the fourteen papers is provided in Table 2. As all of these papers related to more than one stage of the process of innovation adoption, and so in order to facilitate analysis and to prevent the table from becoming unnecessarily cumbersome, papers were categorised into two groups depending on their focus. Papers

Table 1
ORC scales and what they measure.

A. Motivation for change (agency needs)
1. Program needs: Staff's appraisal of the programs attributes and deficits, specifically relating to program objectives, performance, staff dynamics, and communication systems.
2. Training needs: Staff identification of training needs in a range of specific areas.
3. Pressures for change: Staff's perceptions of sources of change, internal: (e.g. service users, managers or staff) or external (e.g. regulation, funding).
B. Institutional resources
1. Offices: The appropriateness of equipment and the physical environment.
2. Staffing: Adequacy of skill mix and staffing levels.
3. Training resources: Emphasis placed by program on training in respect of prioritising and providing exposure.
4. Equipment: Utilisation and provision of computerized systems and hardware.
5. Internet: Staff ease of access to e-communications and utilisation of internet for professional development.
C. Staff attributes
1. Growth: The degree to which staff are provided with and utilize opportunities for professional development.
2. Efficacy: Staff beliefs about their own professional abilities and ability to perform effectively.
3. Influence: The degree to which an individual provides support for others and influences decision making.
4. Adaptability: Staff capability, willingness to learn and adapt new ideas.
D. Organizational climate
1. Mission: Clarity of organizational goals.
2. Cohesion: Dynamics between staff; levels of teamwork, co-operation and trust.
3. Autonomy: The degree to which the program facilitates independent decision making.
4. Communication: The degree to which information is shared, effectiveness of formal and informal information networks and interactions with managers.
5. Stress: Staff perceptions of workload, pressure and levels of frustration amongst staff.
6. Change: Staff participation in and program's ability to facilitate change and embrace new ideas.

that related principally to training or a training event were categorised into (a) Exposure to and adoption of training, while the remaining papers were categorised as relating to (b) Adoption and implementation of innovations. Within each classification, studies have been ordered by author and year. Although all of these studies measured ORC using the tool or a shortened version of the tool developed by Lehman et al. (2002), few of the studies were directly comparable in terms of their objectives and methodology. The implication was that cross comparison of results was challenging and a meta analysis was not possible. It is impractical to discuss all of the significant results from the subscales in the fourteen studies included in this paper. Therefore, in most cases, this paper will principally refer to 4 the ORC domains but will discuss subscales where they have special significance or where a shortened version of the ORC tool has been used.

As all of the included studies utilised a version of the same tool, Table 3 has been designed to provide a succinct overview of how ORC domains and subscales are related to the process of innovation adoption. This table highlights important relationships between variables measured by this interpretation of ORC, and the heterogeneity of outcomes explored in the included papers. Discussion of the important findings in this table are discussed throughout this paper. Within Table 3, the overall study findings are summarized and relationships are identified as being either statistically positive (+) or negative (−) in relation to ORC subscale scores. While it is important to note that some studies used a shortened version of the ORC tool, all the statistically significant results which were incorporated into the full summary Table 3 are included here.

3.1. Exposure to and adoption of training

Six papers were ultimately considered to be primarily related to training and the adoption of innovations related to training. These studies explored areas such as training needs or preferences, exposure to training, satisfaction with training or utilisation of training (Courtney, Joe, Rowan-Szal, & Simpson, 2007; Joe, Broome, Simpson, & Rowan-Szal, 2007; Lehman, Becan, Joe, Knight, & Flynn, 2012; Lundgren et al., 2011a; Rowan-Szal, Greener, Joe, & Simpson, 2007; Simpson, Joe, & Rowan-Szal, 2007). The six studies that related to training represented a range of outcome measures and methodologies, but the approach taken by Courtney et al. (2007) was unique in that they utilised ORC measurements, both as a feedback for program directors in a training workshop, but also to predict engagement in a follow up quality improvement initiative. This paper demonstrates that ORC measurements may be incorporated effectively into training events to highlight areas for organizational improvement, thus enhancing an overall 'change message'.

Lehman et al. (2002) first found that higher program readiness for change was associated with poorer program ratings in the motivation for change domain, and the results in the present review support this finding. Deficits identified in the motivation for change domain were related to staff having more specific training needs identified, and a higher preference for training in scientifically based approaches (Lundgren et al., 2011a; Rowan-Szal et al., 2007). This was also predictive of the likelihood of staff engaging in a change initiative subsequent to a training event (Courtney et al., 2007). In programs where staff scored highly in motivation for change domain, and identified poorer institutional resources, staff were also less likely to have had exposure to training (Lehman et al., 2012). Specifically, having greater access to e-communication was important, and related to both more exposure to, and better utilisation of training (Lehman et al., 2012). Staff recognition of program deficits can be positive provided opportunities are made available for change to occur.

Staff also express a greater preference for scientifically based training where they see themselves as having more opportunities for growth, higher adaptability, greater efficacy and in particular more influence (Courtney et al., 2007; Lehman et al., 2012; Lundgren et al., 2011a). This was attributed to their belief that their personal attributes will allow them to adopt these interventions in practice, subsequent to a training event. Staff perceptions of positive program climate, including their organizations as having a greater openness to change, were an important predictor of staff support for scientifically based training (Lundgren et al., 2011a). As with appraisal of their own skillsets and attributes, staff support for scientifically based innovations is conditional on their appraisal of anticipated support for training implementation. These findings are consistent with conceptual interpretations of ORC where not only being *willing*, but also being *able* is important (Weiner et al., 2008). Having better program resources and better staff attributes is also related to higher training satisfaction with and lower barriers for training adoption (Rowan-Szal et al., 2007).

The organizational climate domain was particularly important in determining the success of innovation adoption. Satisfaction with training has been linked to training adoption, and is higher in programs which have a more favourable organizational climate (Joe et al., 2007; Simpson et al., 2007). In addition to this, the organizational climate domain predicts how successfully training can be adopted, and it is strongly related to the likelihood of engaging in the process of organizational change (Courtney et al., 2007; Joe et al., 2007). In the only longitudinal study included in this review, Simpson et al. (2007) describe a positive

relationship between organizational climate and training adoption, but also identify trends which relate organizational climate with training satisfaction, adoption and improved client outcomes.

In relation to exposure to and adoption of training, staff who perceive themselves as having more adverse working conditions, not only have a greater desire for change but can also identify more specifically, at least through training requirements, how some of that change can occur. A discrepancy in staff perceptions of current and potential future conditions, can provide them with the motivation to embrace and adopt new innovations, but in practice the opportunities for training in these programs is often limited. Organizational climate provides basis on which innovation or change can be sustained.

3.2. Adoption and implementation of innovations

Eight studies focused on the adoption and implementation of treatment innovations. Four of these studies were cross sectional surveys which examined staff views on the utility of, levels of modifications to, and barriers in implementing evidence based practice (Fuller et al., 2007; Lundgren, Chassler, Amodeo, D'Ippolito, & Sullivan, 2012; Lundgren, Krull, Zerden Lde, & McCarty, 2011b; Lundgren et al., 2013). A mixed methods study by Henry et al. (2010) assessed staff attitudes to a proposed treatment innovation using qualitative interviewing and ORC measurements, while two studies described the process of implementation of new innovations where ORC was measured and reportedly influenced this process, but the utility of the ORC tool in these descriptions is not clear (D'Ambrosio, Laws, Gabriel, Hromco, & Kelly, 2006; Elarabi et al., 2014). Finally, an RCT by Crits-Christoph et al. (2010) primarily focused on a trial of a patient feedback mechanism where ORC was a dependent variable. This RCT did not yield any significant results in relation to ORC.

Overall, more favourable ratings in all ORC domains were associated with positive attitudes towards treatment innovations and less perceived barriers in terms of their implementation (Fuller et al., 2007; Lundgren et al., 2012). Programs with higher needs in the motivation for change domain reported more support for the use of evidence based practice but also greater barriers in their implementation (Fuller et al., 2007; Lundgren et al., 2012). These are findings which are consistent with papers which were previously related to training exposure and adoption (Lundgren et al., 2011a; Rowan-Szal et al., 2007). A notable finding, is that having better access to e-communication was of particular importance for supporting the use of evidence based practices (Fuller et al., 2007; Lundgren et al., 2011b). This finding is supported by studies discussed previously relating to training exposure and adoption (Lehman et al., 2012). For staff, having ease of access to a source of training and information such as the internet, has an influence on both innovation exposure and adoption.

An important mediator of innovation adoption was the role of influence in the staff attributes domain. For both program directors and staff, having more influence (and also more growth opportunities for directors) was associated with greater support for scientifically based treatment, while staff who reported having more influence also reported making more modifications to evidence based practice (Fuller et al., 2007; Lundgren et al., 2011b; Lundgren et al., 2013). In this context, when variables which are not related to the use of the ORC scale are incorporated, staff who are longer in post, who report less frequently adopting new measures and who have greater influence, also report making more modifications to evidence based practice (Lundgren et al., 2013). Conversely, having less influence and opportunities for growth was associated with more support for non-compliance discharge, which is viewed as a less positive non-evidence based approach (Fuller et al., 2007). The role of staff influence in the process of innovation adoption is important, may have both positive and negative implications, and is worthy of further investigation.

As with exposure to an adoption of training, the organizational climate domain was important. Better mission clarity, more staff cohesion and better organizational communication, ensured that staff support the use of EBPs (Fuller et al., 2007). Conversely, support for a confrontational approach to clients and non-compliance discharge, was higher where, in the organizational climate domain, staff perceived that they had less autonomy and less stress (Fuller et al., 2007). An association between low stress, which should typically be a positive finding, and support for non-compliance discharge and confrontation may be attributable to a lack of pressure to change in these programs (Fuller et al., 2007). More expectedly, high stress levels in the organizational climate domain, were associated with greater perceived barriers for the implementation of evidence based practice (Lundgren et al., 2012).

The application of ORC findings in the process of implementing quality improvement initiatives remains unclear and studies which report using the ORC tool are largely descriptive and ambiguous in their reporting of specific ORC findings (D'Ambrosio et al., 2006; Elarabi et al., 2014; Henry et al., 2010). However, authors attest to the utility of the ORC tool both in terms of determining if an innovation is set to fail or to determine if an organization is ready for an initiative or not (D'Ambrosio et al., 2006; Elarabi et al., 2014). In this respect, it has been suggested that findings in relations to organizational climate, specifically in relation to poor team cohesion and high stress can predict the success or failure of an organization to adopt a new innovation (D'Ambrosio et al., 2006). Additionally, it has been suggested that the ORC tool may be utilised effectively to identify specific program dynamics prior to exposure of new innovations in order to ensure that training and implementation is tailored to unique organizational needs (Henry et al., 2010).

3.3. Overview of factors not measured by ORC

Papers in this review included many other findings which were not measured by ORC but are important to the process of innovation adoption, not only when planning or executing training, but also when planning and resourcing programs. Program size and location, research affiliation and the educational levels of staff were important factors. Programs located in rural areas were found to have identified more barriers to implementing EPB's than those in urban areas (Lundgren et al., 2012). Program affiliation to a research organization was also important and related to significantly more staff support for the use of EBP's, (Lundgren et al., 2011b). Having higher personal levels of education was strongly associated with having positive attitudes to the adoption of evidence based treatment (Lundgren et al., 2011b). Recruiting staff with higher educational levels is important in terms of supporting training adoption, but it is unknown as to what extent this can influence program cohesion and staff consensus during the process of innovation adoption in organizations with a diverse range of employees (Courtney et al., 2007; Lundgren et al., 2011a). Becoming affiliated to a research organization may be something which is more challenging to achieve in rural areas, and an issue which may be addressed successfully through technological developments, thus ensuring exposure to educational and research opportunities for all program types. Ascertaining the optimum size for a treatment program is another area worthy of consideration for planners. Smaller and more poorly financed programs are at a particular disadvantage in terms of their level of exposure to, and utilisation of, new innovations (Lundgren et al., 2012). Staff who are more frequently exposed to training opportunities and have greater satisfaction with training report that they make less modifications to new innovations (Lundgren et al., 2013). The type of innovation proposed is also important, as staff identified that they made less modifications to motivational interviewing compared to other EBPs but (Lundgren et al., 2012; Lundgren et al., 2013). It is unclear if this is related to either the education levels of staff or the frequency of exposure.

Factors relating to staff demographics, team cohesion and workload stress are influential. Staff who identify with their colleagues and who feel a part of a professional community are more likely to have been exposed to training and to feel capable of implementing their learning

Table 2
Extraction table.

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Innovation type 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and innovation- Key findings 9. Quality Assessment 10. Further comments/other key findings
1. Courtney et al. (2007). 2. United States. 3. To identify the characteristics of substance misuse programs which would increase their likelihood of engaging in organizational quality improvement. Study was completed in two phases: i. Staff from programs completed a questionnaire on organizational functioning ii. Workshop was held for programs directors where results of the staff survey were reported to program leaders. Quality improvement strategies were identified and planned. A decision by directors to engage in follow up organizational change was used as an indicator of engagement in program change. 4. Cross-sectional survey + interventional study.	5. Counsellors (n = 284) from 53 substance misuse treatment organizations. ORC questionnaire was completed online by staff one month before a workshop. 11 of 53 programs declined to take part in the change process. 6. Workshop participants were given feedback from ORC data. Objective was to prioritise issues identified in the survey and to plan a change process. The 10 steps presented in *The Change Book* (Addiction Technology Transfer Centers, 2004) was used as a guide. Directors/Leaders were then asked to commit to a change process. 7. ORC assessment (Lehman et al., 2002), The Change Book (Addiction Technology Transfer Centers, 2004).	8. Motivation for change domain: Staff perceptions of higher program needs were positively related to engagement in the change process. The odds ratio increased by 11% for each unit increase in program needs (OR = 1.11, $p = 0.001$). Lower staff consensus (i.e. larger standard deviations (SD) for program needs (OR = 1.31, $p = 0.0001$)) was related to engagement in the change process. Higher staff consensus in this domain (smaller S/D) for pressures for change (OR = 0.57, $p = 0.0001$) was related to engagement in the change process. Institutional resources domain: Negative staff perceptions in the following areas were associated with a higher likelihood of engaging in a change process: staffing (OR = 0.78, $p = 0.0001$): training (OR = 0.94, $p = 0.0039$): computer access (OR = 0.89, $p = 0.003$): e-communication (OR = 0.97, $p = 0.0001$). Lower staff consensus (larger S/D) for staffing (OR = 0.86, $p = 0.01$) was related to engagement in the change process Staff attributes domain: Negative staff perceptions in the following areas were associated with a higher likelihood of engaging in a change process: growth (OR = 0.87, $p = 0.0003$): influence (OR = 0.85, $p = 0.002$). Lower staff consensus (re: larger S/D for influence (OR = 1.27, $p = 0.004$)) was related to engagement in the change process. Organizational climate domain: Negative staff perceptions in cohesion (OR = 0.93, $p = 0.01$): communication (OR = 0.83, $p = 0.0001$): openness to change (OR = 0.80, $p = 0.0001$) were associated with a higher likelihood of engaging in a change process. While the odds of engaging increased 41% for every unit increase on the stress scale (OR = 1.41, $p = 0.0001$). Higher staff consensus on climate scores (lower S/D) in the following areas was related to continuation in the change process: cohesion (OR = 0.81, $p = 0.0001$): autonomy (OR = 0.89,$p = 0.05$): stress (OR = 0.87, $p = 0.01$): openness to change (OR = 0.90, $p = 0.006$). Summary of ORC key findings: i. Negative staff views of program needs are related to increased engagement in the change process. ii. Organizations that are viewed as functioning less adequately are more likely to engage in a change process. iii. Results in the organizational climate domain only support the hypothesis that staff consensus is associated with engagement in the process of organizational change. 9. Fair 10. N.A.
1. Joe et al. (2007) 2. United States 3. A. i. To identify counsellors types based on measures of the work environment using 2 ORC domains; organizational climate and staff attributes. ii. To identify if items in the motivation for change and resources	5. 345 Substance misuse treatment programs across 10 US states were examined. 1047 counsellors from the treatment programs completed a questionnaire 3 months prior to a training conference. 6. Previous training exposure, individual and program-wide adoption and satisfaction with training. 7. ORC assessment (Lehman et al., 2002); and demographic information on counsellors not included in ORC but reported to be predictive of	8. Based on organizational climate and staff characteristics scores, counsellors were grouped into three classes: i. Isolated (43%, n = 450) ii. Integrated (43%, n = 449) iii. Exceptional (14%, n = 148) The "isolated" group had higher scores on stress and lower scores on

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Table 2 (*continued*)

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domains were predictors of these counsellor types. iii. To examine the relationship between counsellor type, as designated by this study, and adoption and satisfaction with workshop training. 4. Cross-sectional survey	counsellor turnover and additional subscales on training outcomes; exposure to, satisfaction with training and individual and program-wide adoption.	communication and cohesion. Those reporting higher scores in the program resources domain were more likely to belong to integrated or exceptional groups, with all of the scales in program resources domain being significant. "Isolated" group had higher training needs, program needs and were more likely to report pressures for change than the other groups. The isolated group reported significantly lower scores than the integrated or exceptional groups in respect of: training exposure ($p < 0.01$), individual adaptation ($p < 0.01$), program wide adoption ($p < 0.0001$), and satisfaction ($p < 0.0001$). Summary of ORC key findings: i. The organizational climate domain was reported as being an important predictor of whether counsellors were ready to engage in the adoption process ii. Staff perceptions of the resources domain and the motivation for change domain were important predictors of counsellor types as designated in this study 9. Fair 10. Those with a longer tenure were more likely to be in the "isolated" group. African Americans were more likely to be in the exceptional group. Interns were more likely to be in the integrated or exceptional groups.
1. Lehman et al. (2012) 2. United States 3. To examine the relationship between two combined influences; program fiscal resources and counsellors perceptions of workplace resources on two mechanisms of training; exposure to training and utilisation of training. 4. Cross sectional survey	5. 59 out-patient drug treatment programs and 323 counsellors. Data was extracted from a 5 years Treatment Costs and Organizational Monitoring (TCOM) project (Broome, Flynn, Knight, & Simpson, 2007; Flynn et al., 2009; Knight, Broome, Simpson, & Flynn, 2008) All programs had completed a program level financial assessment and counsellor level organizational assessments in the first year of the TCOM project. Directors or financial officers provided information on treatment costs. Program directors/clinical managers provided information on program characteristics. Clinical staff and directors provided information on organizational functioning. 6. Exposure training to and utilisation of training 7. TCU Survey of structure and operations (SSO; Knight et al., 2008). Treatment Costs Analysis Tool (TCAT; (Flynn et al., 2009)). Survey of Organizational Functioning (SOF; Broome et al., 2007; Lehman et al., 2002)	8. Motivation for change domain: Correlation co-efficients for the staff level outcomes showed that higher expressed training needs was related to lower training exposure ($p < 0.05$). In a composite model combining program and staff level relationships, training needs was related to training exposure ($p < 0.10$) The institutional resources: training exposure correlated with office resources ($p < 0.05$) and training resources ($p < 0.001$) and e-communication ($p < 0.001$). Training utilisation correlated with e-communication ($p < 0.01$). In a composite model combining program and staff level relationships, less training exposure was related to better office resources ($p < 0.05$), poorer training resources ($p < 0.001$), and less access to e-communication ($p < 0.01$). Summary of ORC key findings: i. Staff who reported greater resources also reported greater exposure to training ii. E-communication is important to training exposure 9. Fair 10. Other findings at the staff level were: higher levels of staff burnout were associated with poorer training utilisation while reporting a sense belonging in a professional community related to better exposure and utilisation. Higher job satisfaction was related to more training exposure. Other findings in the composite model were: poorer training utilisation is associated with higher burnout rates and direct client contact time. Program costs and job resources influence the level of exposure to training but utilisation is more

closely associated with job attitudes and being part of a co-operative professional community.

1. Lundgren et al. (2011a).
2. United States
3. B.
   i. To determine the association between treatment directors attitude to organizational change and their attitudes towards staff being resistant to organizational change.
   ii. To determine the level of association between staffs attitude towards the treatment units capacity for organizational change and their attitudes regarding wanting training in Evidence Based Practice (EBP).
5. Cross sectional survey.
6. 212 Community substance misuse treatment centers randomly selected from 700. 212 program directors and 312 staff from selected programs were included. Staff completed a telephone assessment and completed ORC assessments online.
7. Training based on scientific evidence or EBP
8. ORC (Lehman et al., 2002) Texas Christian University ORC-D (for directors) and ORC-S (for staff).
9. Motivation for change domain: Bivariate analysis of ORC subscales demonstrated that staff who reported higher program needs reported a greater preference for training based on scientific evidence ($p < 0.05$).
   Staff attributes domain: Bivariate analysis of ORC subscales demonstrated that staff who reported more adaptability ($p < 0.05$), greater efficacy ($p < 0.01$) and more influence in their workplaces ($p < 0.01$) reported a higher preference for training based on scientific evidence.
   Organizational climate domain: Multivariate analysis of ORC subscales demonstrated that staff who reported higher organizational openness to change also expressed a greater preference for training based on scientific evidence ($p < 0.05$). This finding was supported in a final linear regression model ($p < 0.05$).
   Summary of ORC key findings:
   i. Final linear regression analysis demonstrated that staff perceptions of their organizations willingness to support change was the most important ORC variable in respect of individuals showing a higher preference for training based on scientific evidence.
   ii. Directors who reported that their programs had higher needs, had less autonomy and cohesion amongst staff were significantly more likely to report their staff members as being resistant to change.
10. Fair
11. Staff with higher levels of education reported significantly greater support for training based on scientific evidence.

1. Rowan-Szal et al. (2007).
2. United States
   i. To confirm factor structure and basic psychometric properties of seven Programs Training Needs (PTN) scales.
   ii. To explore differences between how staff and directors characterise their training requirements.
   iii. To explore the relationship between the PTN assessment and organizational readiness to change (ORC).
5. Cross sectional survey.
6. 589 PTN assessments were collected from 194 addiction treatment programs. 579 ORC assessments were completed in 231 addiction treatment programs. Data was collected over a two year period.
7. Training needs, training of staff, assessment of facilitators and barriers, Program Training Needs (PTN) assessment (Rowan-Szal et al., 2007), ORC assessment (Lehman et al., 2002).
8. Correlations of PTN scales with composite scores of ORC domains:
   Motivation for change (needs/pressure): Staff reporting greater training needs ($p < 0.001$) and higher preferences for specific training content ($p < 0.001$) reported higher motivation for change.
   Resources: Staff reporting higher satisfaction with training ($p < 0.001$) and better program facilities and climate ($p < 0.001$) who had lower preferences for specific training content ($p < 0.01$), reported lower barriers to training ($p < 0.001$) also rated their program resources as being greater.
   Organizational Climate: Staff who rated their agencies as having a better organizational climate rated their programs facilities and climate more highly ($p < 0.001$) and reported greater satisfaction with training ($p < 0.001$) and had less specific preferences for training content ($p < 0.05$) and reported lower barriers to training ($p < 0.001$).
   Staff attributes: Staff who reported higher attributes amongst staff also had greater satisfaction with training ($p < 0.05$) and rated program facilities and climate as being better ($p < 0.05$).
   Summary of ORC Key findings:
   i. Staff reporting higher motivation for change also expressed higher needs for training and higher preference on training content scales.
   ii. Staff reporting higher training barriers had poorer perceptions of organizational climate and program resources on ORC subscales.
   iii. Treatment units with higher staff ratings of institutional resources and climate scores also reported better facilities,

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Table 2 (*continued*)

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		fewer barriers to training and greater satisfaction with training. 9. Fair 10. Staff and directors tended to agree on most training issues. On the PTN scales staff training needs and training barriers were significantly higher in programs with poorer program facilities and climate and poorer computer resources. Programs reporting more barriers were less satisfied with training.
1. Simpson and Flynn (2007). 2. United States 3. C. i. To evaluate if staff perceptions about training needs and program readiness related to subsequent staff evaluations of training and adoption of innovations ii. To evaluate if the level of organizational functioning is related to staff responses to subsequent training iii. To evaluate if staff ratings on the quality of workshop training related to subsequent client ratings of treatment engagement iv. To identify if there are long term changes in staff ratings of program needs and readiness that are related to intervening training experiences. 4. Longitudinal, prospective quasi-experimental interventional study.	5. Data was collected over a two year period. Subject pool consisted of supervisors, staff and clients from publicly funded substance abuse treatment programs in one US state. 12 months before a training workshop: 253 program training needs assessments (PTN) were completed across 59 treatment programs 4 months before a training workshop: 191 organizational readiness to change (ORC)* forms were returned and 1147 client evaluation of self and treatment (CEST) forms were returned During the training period: Workshop Evaluation Surveys (WEVAL) 293 were collected from staff participants 6 months after training: 293 Workshop Assessment Follow Up (WAFU) forms were completed 9 months after training: 174 ORC* forms were returned and 1015 CEST forms were returned 12 months after training: 192 PTN forms were returned (number of treatment programs not stated) 6. Training needs assessment with follow-up workshop (focused on how to improve therapeutic alliance) and evaluation. 7. Pre-Training Needs assessment (PTN: Rowan-Szal et al., 2007). *Multi-dimensional ORC assessment (Lehman et al., 2002): only organizational climate subscales were used for this paper. Client Evaluation of Self and Treatment (CEST: (Joe, Broome, Rowan-Szal, & Simpson, 2002), Workshop Evaluation (WEVAL: (Bartholomew, Joe, Rowan-Szal, & Simpson, 2007), Workshop Assessment Follow Up (WAFU: (Bartholomew et al., 2007)).	8. Organizational climate: When ORC (Time 1 only) was correlated with the WAFU measures, staff who perceived their programs to have higher mission clarity also reported higher post-training satisfaction ($p < 0.01$), more trial use of the innovation ($p < 0.05$), improved counselling skills after training ($p < 0.05$) and better therapeutic alliance and rapport. Staff who perceived their staff group as having higher cohesion ($p < 0.05$), and better communication ($p < 0.05$), also reported better therapeutic alliance and rapport post training. Staff who perceived their organizations as having more openness to change were significantly more likely to report higher post-training satisfaction ($p < 0.05$), trial use of the innovation ($p < 0.05$), better counselling skills ($p < 0.05$), and better therapeutic alliance and support ($p < 0.05$). Summary of ORC Key findings: i. Organizational openness to change was significant in terms of realising the implementation of the innovation. Mission clarity was also an important ORC variable in this respect. 9. Good 10. For the CEST evaluation, better counsellor rapport was significantly related to staff reports of greater post-training satisfaction and trial use of the innovation. Higher client treatment participation had a significant relationship with higher staff ratings of post-training satisfaction, trial use of the innovation and better counselling skills. In particular, higher staff ratings of program facilities and climate, program resources and computer facilities significantly related to adoption of training.
1. Crits-Christoph et al. (2010). 2. United States 3. To evaluate the efficacy of a real time patient feedback survey (PFS) on 3 patient outcomes: drug and alcohol use, attendance at group counselling sessions, and therapeutic alliance.To explore if implementation of the intervention had an effect on clinician related measures such as organizational functioning and job satisfaction. 4. RCT/randomised cohorts	5. Over 1500 service users and 118 clinicians from 20 community based non-methadone prescribing outpatient substance misuse clinics divided into two cohorts; ten intervention (PFS) and ten non-intervention programs. 6. Intervention involved patient feedback and organizational quality improvement measures including patient newsletters and patient feedback letters for staff over a twelve week period of group therapy. Control group completed PFS at weeks one and twelve while intervention group completed PFS weekly. Control group then engaged with PFS after week twelve. 7. Patients: Patient feedback survey (PFS) measuring 4 domains:	8. Summary of ORC key findings: i. No significant relationships were found between ORC at baseline and week 12 or between the two groups. ii. The PFS intervention did not change staff views of organizational readiness to change. One exception being a small but significant difference ($p = 0.023$) between the study groups from baseline to week 12 in the institutional resources scale, explained due to a small decrease in the intervention group and a small increase in the control group. iii. There was no evidence of an intervention effect on the primary drug and alcohol use scales: secondary measures of

	i. Service user demographics, therapeutic alliance treatment satisfaction ii. Self-reported substance misuse using two items from The Addiction Severity Index (McLellan, Luborsky, O'Brien, & Woody, 1980) Staff: Three questionnaires measuring: i. ORC questionnaire (Lehman et al., 2002). ii. Employee/supervisor relationship iii. Job satisfaction	therapeutic alliance: clinician-related measures of organizational functioning and job satisfaction. 9. Good. (low risk of bias) 10. Primary focus of this study was not on organizational readiness to change.
1. D'Ambrosio et al. (2006). 2. United States 3. To describe the process of implementing a Knowledge adaption study (KAS) – Implementation of Motivational Interviewing in two substance misuse treatment agencies over a two year period where ORC was assessed as a part of this process 4. Mixed Methods	5. A large outpatient substance abuse treatment provider serving both adolescents and adults and a residential substance misuse agency providing treatment for corrections involved adult men and women. 6. Implementation of Motivational interviewing Researchers followed the 10 step process in 'The Change Book' (Addiction Technology Transfer Centers, 2004) using researchers as change agents. Training in MI and monitoring of implementation was provided over the period. ORC was measured (over 2 months in year one) to inform process. 7. ORC assessment (Lehman et al., 2002); multi-dimensional concept of ORC. 'The Change Book' (Addiction Technology Transfer Centers, 2004)	8. Summary of ORC key findings: i. The research team underestimated the implications of results of the ORC. At the small agency, high stress and low cohesion in the adult women's program was identified. These findings were overlooked and later accredited with the study having to move to the men's program due to encountering difficulties in its implementation. No further relationships with organizational readiness were reported 9. Fair 10. N.A.
1. Elarabi et al. (2014). 2. United Arab Emirates 3. To describe the experience of program transformation in a residential substance dependence treatment program over a four year period in two phases; program development + program implementation. Organizational readiness to change is measured as part of an implementation framework. 4. Description of innovation.	5. 26 bedded mix of inpatient detoxification and rehabilitation beds and a 15 bedded long-stay Therapeutic Community. 14 treatment staff completed the ORC questionnaire 6. Re-design of program an implementation of changes in two phases over a 3 year period: program development and implementation. Changes intended to address; length of stay, long waiting lists, service expansion and diversity in demand for treatment. A task force (n = 7) was responsible for an assessment and implementation process. 7. ORC assessment (Lehman et al., 2002); multi-dimensional concept of ORC. Utilised Comprehensive Framework for Implementation Research (CFIR) (Damschroder, Aron, Keith, Kirsh, Alexander, & Lowery, 2009).	8. Summary of ORC key findings: i. All 4 domains of ORC; (n = 14) Staff/Climate/Resources/Motivation scored below acceptable mean, identifying a significant need for change. ii. Study reported that low mean scores in four ORC domains identifying high program needs. These needs were confirmed by internal audit. iii. Problem barriers to implementation were identified through measurement of ORC and were reported as having facilitated the process of implementation. 9. Fair 10. NA
1. Fuller et al. (2007). 2. United States 3. To assess the relationship between organizational readiness to change (ORC) and staff opinions towards five different treatment approaches. Four evidence based practices: i. Use of evidence based treatment manuals. ii. Medications. iii. Integrated mental health services. iv. Motivational incentives. v. AND confrontation and non-compliance discharge. 4. Cross sectional survey.	5. Program administrators and staff from 249 participating programs; outpatient (n = 79) residential and in-patient (n = 95), detoxification programs (n = 34), methadone programs (n = 41). Number of participants not clear- number of questionnaires not completed in full: (between n = 2136 and n = 2234). Opinions towards treatment types were measured as outcomes using ORC (level 1 predictor) as an independent variable. Level 2 predictors examined type of treatment service e.g. free standing treatment centers, for profit status, revenue, inpatient/outpatient etc. 6. Four innovation types and one negative outcome (v) i. Use of treatment manuals ii. Medications iii. Integrated mental health services iv. Motivational incentives	8. Level 1 (ORC) influences on opinions towards treatment innovations: Motivation for change domain: Staff who viewed their programs needs as being greater had significantly more support for the use of treatment manuals ($p < 0.005$), medications ($p < 0.05$), and motivational incentives ($p < 0.05$). Institutional resources domain: The computer equipment subscale had a negative relationship with the use of treatment manuals ($p < 0.05$), and a positive relationship with the use of confrontation and non-compliance discharge ($p < 0.05$). Staff associated better offices with increased support for non-compliance discharge ($p < 0.001$). Staff perceptions of better internet access was associated with increased support for the use of motivational incentives ($p < 0.001$), treatment manuals ($p < 0.05$), and medications ($p < 0.01$). Support for non-compliance discharge and confrontation was strongest in agencies with poorer perceived internet access ($p < 0.001$). Staff Attributes domain: Staff who reported higher influence reported

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Table 2 (*continued*)

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Innovation type 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and innovation- Key findings 9. Quality Assessment 10. Further comments/other key findings
	v. Confrontation and non-compliance discharge was considered to be a negative outcome ORC assessment (Lehman et al., 2002); multi-dimensional concept of ORC. Two additional questionnaires on organizational characteristics and workforce demographics were used, details of which are not reported in this paper.	more support for integrated treatment manuals ($p < 0.001$), motivational incentives ($p < 0.01$), and use of treatment manuals ($p < 0.01$). Higher opportunities for growth were associated with increased support for the use of medications ($p < 0.01$). Staff who saw themselves as more adaptable were more likely to support integrated mental health services ($p < 0.05$), and the use of treatment manuals ($p < 0.05$). Support for non-compliance discharge and confrontation were stronger when staff saw less opportunity for growth ($p < 0.001$), and less influence with their peers ($p < 0.05$). Organizational Climate Domain: A greater sense of program mission was associated with support for the use of treatment manuals ($p < 0.001$) and integration with mental health services ($p < 0.05$). Support for integration with mental health services was also associated with higher staff cohesion ($p < 0.01$) and greater stress ($p < 0.0001$) and lower ratings on openness of communication ($p < 0.01$). Higher staff autonomy was associated with less support for the use of motivational incentives ($p < 0.05$). Lower organizational stress was associated with more support for the use of confrontation and non-compliance discharge. Summary of ORC key findings: i. Programs with higher staff scores on program needs were more likely to support EBPs. ii. Better Internet access and growth and influence amongst work peers appear to be key in supporting the use of EBPs and reducing support for non-compliance discharge and confrontation. iii. Staff attributes are important both in terms of supporting the use of EBPs and reducing support for confrontation and non--compliance discharge. iv. Organizational climate was important as having a strong sense of mission and supportive of the use of EBPs. Low stress was associated with support for non-compliance discharge and confrontation perhaps reflecting a lack of pressure to change v. Ratings for better offices and computer access and increased support for non-compliance discharge may be because these services had poorer internet access. 9. Fair. 10. N.A.
1. Henry et al. (2010). 2. United States. 3. To assess attitudes towards HIV testing generally and to assess organizational readiness to implement a nurse-initiated HIV testing specifically in two substance use disorder treatment clinics for military veterans 4. Mixed methods study completed in two phases: i. Semi-structured interviews with key stakeholders to assess attitudes regarding implementation. ii. Cross sectional survey conducted of staff to assess level of agreement in supporting evidence base for intervention and organizational readiness to implement the intervention.	5. Two veteran's health administration substance use disorder clinics. Site 1 serves approx. 4500 patients per annum with 5 programs: detoxification, dual diagnosis specialism, 4-month psycho-social program, chemical dependency unit and opiate treatment program. Site 2 serves approx. 2300 patients per annum offering several treatment modalities with a wide range of pharmacological and psycho-social treatments. Phase one involved staff from site 1 ($n = 17$) and site 2 ($n = 11$). Phase two surveyed staff from site 1 ($n = 29$) and staff from site 2 ($n = 21$). 6. HIV testing and proposed nurse led HIV testing. 7. Survey items based on PARiHS framework (Kitson et al., 2008). Organizational readiness for this specific change was assessed by obtaining	8. Phase 1 (Qualitative) findings staff responses to implementation site 1 and 2 combined found that 13 staff supported the model, 9 were negative towards it and 4 had mixed views. 13 staff anticipated the patient's reaction would be positive, 6 reported that it would be negative and 4 had mixed views. Staff on both sites ($n = 22$) agreed that the client group was at high risk of HIV infection and that rapid testing was supported by research. Barriers to implementation identified (both sites) were: i. Characteristics of the client population- chaotic lifestyles, unable to keep appointments etc. ii. Workload, time and resources- service capacity

staff views of; research evidence, clinical experience, patient experience, fit with organizational mission (Henry et al., 2010).
Shortened version of ORC assessment (Lehman et al., 2002); multi-dimensional concept of ORC, using organizational climate subscales only- 30 items examining; mission, staff cohesion, autonomy, openness of communication, stress and openness to change.

iii. Emotional impact of positive result on clients and follow up treatment

Staff at site 1: identified the 'medical nature' of testing as being a barrier as they typically referred clients to primary care for medical issues. They also identified agreement with unions as being a barrier.
Phase 2 (Quantitative): Both sites supported the view that the initiative was evidenced based. Both sites fell within ORC percentile ranges (25%–75%) based on 2000 interviews conducted by Simpson and Dansereau (2007).
Site 1 scored more highly on; mission ($p < 0.05$), and lower on stress ($p < 0.05$). Site 2 scored more highly that the initiative 'fits with their mission' ($p < 0.05$).
Summary of ORC key findings:

i. Both sites would be suitable for the implementation of the initiative as they scored within ORC percentile ranges.
ii. Site 1 adopted a higher degree of organizational readiness to adopt new innovations as indicated by shared understanding of the clinic mission and lower stress so may be more receptive to the initiative.
iii. Findings can be used to tailor implementation strategies which are appropriate to the particular program dynamics.

9. Fair
10. N.A.

1. Lundgren et al. (2013).
2. United States.
3. To examine whether treatment units staff perceptions of their organizations readiness to change was associated with their adherence or levels of modifications to evidence based practice (EBP) protocols during evidence based practice implementation.
4. Cross sectional survey.
5. 310 addiction treatment programs and 510 staff selected from a range of locations in the US. All of these programs had been selected and funded to implement evidence based practice by Centre for Substance Abuse Treatment (CSAT) and Substance Abuse and Mental Health Services Administration (SAHMSA).

A telephone interview using open ended questions regarding implementation of EBPs was conducted. ORC questionnaire with extended training exposure, satisfaction and utilisation (program level and individual level) domain included was completed online. Demographic information on workers was collected

6. Implementation of 3 types of EBPs: Motivational Interviewing, Adolescent Community Reinforcement Approach and Cognitive Behavioural Therapy.
7. Levels of barriers to implementing EBPs was recorded using a 10 point scale. ORC assessment (Lehman et al., 2002).
8. Staff attributes domain bivariate analysis of independent variables in relationship to ratings on the modifications scale showed that staff who reported having more influence in their organizations reported more modifications to evidence based practices ($p < 0.01$). This finding was also supported in multivariate linear regression modelling ($p < 0.05$).
Organizational climate domain, staff who perceived a lower sense of organizational mission ($p < 0.01$), lower sense of organizational cohesion ($p < 0.01$) and who experienced more stress ($p < 0.01$), reported more modifications to EBPs
Summary of ORC key findings:

i. Influence was found to be the most important variable on the ORC scale in terms of modifications to EBPs
ii. Organizational climate is important in terms of the implementation of EBPs
iii. A non-ORC variable: staff perception of barriers had the greatest influence on modification of EBPs

9. Good
10. Other findings: Staff who had 5 or more years' experience in the drug counselling field, who worked in programs funded by CSAT/-SAHMSA for a longer period of time, or who reported less frequently adopting new counselling measures and techniques, reported higher levels of modifications when compared to their counterparts.
Staff who had implemented Motivational Interviewing (MI) compared to any other EBP, staff who reported higher satisfaction with training and staff who reported having more in house training reported lower levels of modifications made to EBPs. Staff reports of higher barriers in implementing EBPs were highly correlated with higher modifications of EBPs.

(continued on next page)

Table 2 (*continued*)

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Innovation type 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and innovation- Key findings 9. Quality Assessment 10. Further comments/other key findings
1. Lundgren et al. (2012). 2. Barriers to implementation of evidence-based addiction treatment: A national study. 3. United States. 4. To evaluate the relationship between staff perceptions of organizational capacity and their experience of barriers in implementing new evidence based practice (EBP) when controlling for unit characteristics, staff characteristics, and type of EBPs implemented. 5. Cross sectional survey.	6. 510 staff and 296 program directors from 330 substance misuse treatment organizations (34 organizations were excluded during study). Telephone surveys were conducted with all participants where demographic data was obtained and questions relating to barriers in implementing EBPs was assessed. Organizational readiness to change questionnaires were also completed by participants. 7. 4 EBPs: Adolescent community re-enforcement approach, Motivational Interviewing, Assertive Community Treatment and Cognitive Behavioural Therapy 8. Multi-dimensional concept of ORC (Lehman et al., 2002). Texas Christian University ORC-D (for directors) and ORC-S (for staff).	9. Motivation for change domain: In bivariate regression analysis, staff who rated their programs as having higher program needs ($p < 0.001$), and higher training needs ($p < 0.01$), reported more barriers in implementing EBPs. Directors who rated their programs as having higher program needs ($p < 0.001$) and higher training needs ($p < 0.001$), reported more barriers in implementing EBPs. Multivariate regression analysis identified that staff who reported high program needs reported higher barriers in implementing EBPs ($p < 0.05$). Resources domain: In bivariate regression analysis: staff who rated their organizations as having poorer office environments ($p < 0.05$), inadequate staffing resources ($p < 0.01$), and inadequate levels of training ($p < 0.001$), reported more barriers in implementing EBPs. Directors who rated their office environments as being more inadequate reported more barriers in implementing EBPs ($p < 0.05$). Staff attributes domain: In bivariate regression analysis: staff who reported having lower levels of influence reported having greater barriers in implementing EBPs ($p < 0.05$). Organizational climate domain: In bivariate regression analysis: staff who rated their organizations as having poorer mission clarity ($p < 0.001$), lower cohesion amongst staff ($p < 0.05$), poor communication ($p < 0.001$), higher stress levels ($p < 0.001$), and less support for change ($p < 0.001$), reported more barriers in implementing EBPs. Directors who rated their organizations as having poorer mission clarity ($p < 0.05$) and higher stress levels ($p < 0.001$), reported more barriers in implementing EBPs. Multivariate regression analysis identified that staff ($p < 0.05$), and directors ($p < 0.05$), identified higher stress levels as being a significant barrier to implementing EBPs. Summary of ORC key findings: i. 11 ORC sub-scales were associated with staff ratings of barriers in implementing EBPs with the organizational climate domain being the most important followed by the resources domain ii. For both staff and directors, multivariate regression analysis identified stress as being the most significant inhibitor to implementing EBPs 10. Fair. 11. Associated with higher ratings of barriers in implementing EBPs: Working in a program funded by two state organizations for a longer period of time, working in a rural area, not implementing Motivational interviewing but other EBPs.
1. Lundgren et al. (2011b). 2. United States 3. To compare program directors and staffs attitudes regarding the usefulness of evidence based practice (EBP). 4. Cross sectional multi-cohort survey	5. 518 staff and 814 program directors from 296 community based substance misuse treatment organizations. Participating centers had received funding from two distinct bodies. All staff completed a phone interview which assessed staff and characteristics and attitudes to EBPs. and completed the ORC questionnaire 6. Scientifically supported treatments (EBP) 7. ORC (Lehman et al., 2002): Texas Christian University ORC-D (for directors) and ORC-S (for staff). Demographic variables including levels of education of staff were also recorded.	8. Program and staff attitudes agree/disagree with statement: "scientifically supported treatments can be useful". Multivariate analysis results only: Motivation for change: NS Institutional Resources: Directors: internet ($p < 0.000$). Staff: internet ($P < 0.01$). Final linear regression model for staff showed that staff ($p < 0.05$) and directors ($p < 0.05$) working in a program with higher rated levels of internet resources reported higher agreement with statement. Staff attributes: Directors: influence ($P < 0.05$) growth ($p < 0.000$) Staff: influence ($P < 0.01$). Final linear regression model for staff showed that

staff working in a program with higher rated levels of influence reported higher agreement with statement ($p < 0.05$).
Organizational climate: Directors: autonomy ($P < 0.05$) Staff: autonomy ($P < 0.05$)
Summary of ORC Key findings:

i. For both directors and staff, working in an organization that had higher levels of access to internet technology were associated with having more positive attitudes towards evidence based treatment
ii. For staff having higher levels of influence in their workplace was associated with having more positive attitudes towards evidence based treatment

9. Fair
10. Other findings: For both directors and staff final linear regression models demonstrated that being affiliated to a research organization and having a higher personal level of education were strongly associated with having positive attitudes to evidence based treatment.

* Organizational climate was the only domain measured.

Table 3
Overview of relationships between ORC domains, subscales and the process of innovation adoption.

Domain	Subscales	Relationship with ORC: (+) = statistically positive relationship, (−) = statistically negative relationship
Motivation for change (MFC)	a) Program needs: b) Training needs: c) Pressures for change: d) Composite:	a) (+) more commitment to engage in a change process (n = 1), membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n = 1), a greater preference for training based on scientific evidence (n = 1), support for 3 EBPs: treatment manuals, motivational incentives and medications (n = 1), more barriers in implementing EBPs (n = 1). b) (+) Less training exposure (n = 1), more barriers in implementing EBPs (n = 1). Greater staff consensus was related to greater commitment to engage in a change process (n = 1). c) (+) membership of 'isolated' counsellor group = less likely to be exposed to, adopt, or be satisfied with training (n = 1). Higher staff consensus was related to commitment to engage in a change process (n = 1). d) (+) higher training needs (n = 1), greater preferences for specific training content (n = 1), mean scores used to identify need for program transformation (n = 1). Confirmed suitability of program for an intervention as scores were within acceptable percentile ranges (n = 1)
Institutional resources (IR)	a) Offices: b) Staffing: c) Training: d) Equipment: e) Internet: f) Composite:	a) (+) Support for non-compliance discharge[a] (n = 1). (−) membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n = 1), less training exposure (n = 1), more barriers in implementing EBPs (n = 1). b) (−) a higher commitment to engage in a change process (n = 1), membership of 'isolated' counsellor group = less likely to be exposed to, adopt, or be satisfied with training (n = 1), more barriers in implementing EBPs (n = 1). Higher staff consensus was related to commitment to engage in a change process (n = 1). c) (−) a higher commitment to engage in a change process (n = 1), membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n = 1), less training exposure (n = 1), more barriers in implementing EBPs (n = 1). d) (+) support for confrontation and non-compliance discharge[a] (n = 1). (−) higher commitment to engage in a change process (n = 1), related to membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n = 1), support for one EBP: use of treatment manuals (n = 1), more barriers in implementing EBPs (n = 1). e) (+) support for 3 EBPs: motivational incentives, treatment manuals, medications (n = 1), support for scientifically based treatments (n = 1). (−) higher commitment to engage in a change process (n = 1), membership of 'isolated' counsellor group = less likely to be exposed to, adopt, or be satisfied with training (n = 1), training exposure and utilisation (n = 1), support for a confrontational approach and non-compliance discharge. f) (+) greater satisfaction with training (n = 1). (−) higher preferences for specific training content (n = 1), more training barriers (n = 1), mean scores used to identify need for program transformation (n = 1). Confirmed suitability of program for an intervention as scores were within acceptable percentile ranges (n = 1)
Staff attributes (SA)	a) Growth: b) Efficacy: c) Influence: d) Adaptability: e) Composite:	a) (+) support for one EBP: medications, support for scientifically based treatments (n = 1). (−) a higher commitment to engage in a change process (n = 1), support for a confrontational approach and non-compliance discharge (n = 1), b) (+) a greater preference for training based on scientific evidence (n = 1). c) (+) a greater preference for training based on scientific evidence (n = 1), support for three EBPs: integrated mental health services, treatment manuals and motivational incentives (n = 1), more modifications to EBPs (n = 1), support for scientifically based treatments (n = 1).

		(−) a higher commitment to engage in a change process (n = 1), support for a confrontational approach and non-compliance discharge, more barriers in implementing EBPs (n = 1). Higher staff consensus related to commitment to engage in a change process (n = 1).
		d) (+) a greater preference for training based on scientific evidence (n = 1), support for two EBPs: treatment manuals and integrated mental health services. (−) membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n = 1).
		e) (+) greater satisfaction with training (n = 1). (−) mean scores used to identify need for program transformation (n = 1). Confirmed suitability of program for an intervention as scores were within acceptable percentile ranges (n = 1).
Organizational climate (OC)	a) Mission: b) Cohesion: c) Autonomy: d) Communication: e) Stress: f) Openness to Change: g) Composite	a) (+) greater training satisfaction (n = 1), more trial use of an innovation post-training (n = 1), improved skills post-training (n = 1), greater rapport with clients as a result of the training (n = 1), support for two EBPs: use of treatment manuals and integration with mental health services (n = 1), more readiness for a change initiative (n = 1). (−) more modifications to EBPs (n = 1), more barriers in implementing EBPs (n = 1).
		b) (+) greater rapport with clients as a result of the training (n = 1), support for one EBP: integration with mental health services (n = 1). (−) higher commitment to engage in a change process (n = 1), predictor of failure to implement treatment innovation (n = 1), more modifications to EBPs (n = 1), more barriers in implementing EBPs (n = 1). Greater staff consensus related to more commitment to engage in a change process (n = 1).
		c) (+) less support for the use of one EBP: motivational incentives (n = 1), support for scientifically based treatments (n = 1). Greater staff consensus related to commitment to engage in a change process (n = 1).
		d) (+) greater rapport with clients as a result of the training (n = 1). (−) higher commitment to engage in a change process (n = 1), support for one EBP: integration with mental health services (n = 1), more barriers in implementing EBPs (n = 1).
		e) (+) higher commitment to engage in a change process (n = 1), predictor of failure to implement treatment innovation (n = 1), support for one EBP: integration with mental health services (n = 1), more modifications to EBPs (n = 1), more barriers in implementing EBPs (n = 1). (−) more support for confrontation and non-compliance discharge[b] (n = 1). Higher staff consensus related to greater commitment to engage in a change process (n = 1), more readiness for a change initiative (n = 1).
		f) (+) a greater preference for training based on scientific evidence (n = 1), post training satisfaction (n = 1), trial use of an innovation (n = 1), improved skills post-training (n = 1), greater rapport with clients as a result of the training (n = 1) Higher staff consensus related to greater commitment to engage in a change process (n = 1) (−) higher commitment to engage in a change process (n = 1), more barriers in implementing EBPs (n = 1)
		g) (+) better facilities and climate (n = 1), lower preferences for specific training content (n = 1), lower barriers to training (n = 1) (−) membership of 'isolated' counsellor group: less likely to be exposed to, adopt, or be satisfied with training (n = 1), mean scores used to identify need for program transformation (n = 1). Confirmed suitability of program for an intervention as scores were within acceptable percentile ranges (n = 1).

[a] Fuller et al. (2007) state that better office and computer facilities may have been available, this did not necessarily provide access to the internet.
[b] Fuller et al. (2007) related this result to their being less organizational change in programs which support non-compliance discharge and a confrontational approach.

(Lehman et al., 2012). Unsurprisingly, staff with higher workloads or more stress reported being less capable of supporting new innovations (Lehman et al., 2012). Similarly, those who were longer in their positions, had higher burnout rates or had more contact with clients were more likely to report barriers in training adoption (Lehman et al., 2012). Overall, there is a dearth of studies which examine the effect of high workloads, stress and burnout, decreased team cohesion and program size or structure have an impact on client outcomes, or the process of innovation adoption, in substance misuse treatment. The educational levels of staff and skill mix are also important. Findings here, which were beyond the scope of the ORC tool, but related to organizational systems and the size, location and affiliations of programs are worthy of further exploration if we are to build more knowledge on optimum program configuration.

4. Discussion

We systematically reviewed the last fifteen years of scientific research in relation to organizational readiness to change, where it was measured, and its relationship with the process of innovation adoption in addiction services. For this review, the four stages of adoption were considered to be: exposure, adoption, implementation and integration into practice. These stages were rarely directly identified outcomes in each stage of this process, and this is reflective of a lack of psychometrically sound measures for the adoption and implementation of treatments (Garner, 2009). The heterogeneity of the studies included in this review and the diversity of findings made cross-comparison of results challenging and conducting a meta-analysis using ORC findings was not possible. There is a lack of evidence on how ORC can affect the sustained use of innovations over time, and only one study included in this review focused on this, but with some promising results (Simpson et al., 2007).

Workforce and organizational characteristics can significantly influence the process of innovation adoption in substance misuse treatment programs (Glasner-Edwards & Rawson, 2010). Based on the findings reported here, we can conclude that the variables measured using the ORC tool developed by Lehman et al. (2002) can be predictive of success or failure in the process of innovation adoption. Conducting an ORC assessment prior to training or implementation of innovations can provide useful information for planners in the substance misuse field. Using feedback from ORC assessments can provide valuable information for strategic planning and this feedback in itself could also motivate programs to change (Courtney et al., 2007). Ultimately, ORC variables could also have significant implications for client outcomes, particularly in relation to measurements of organizational climate.

The path to adopting an innovation and sustained implementation of a change process involves a complex interaction between the motivation to change, having the resources to change, having the right staff attributes and the organizational climate to support the change. Assessing organizational readiness to change as a part of the process of facilitating effective innovation adoption in addiction treatment is preferable and would help to more effectively target scarce resources (Glasner-Edwards & Rawson, 2010). Findings in this review support the view that resources would be more effectively directed to addressing organizational deficits before engaging in a process of innovation adoption. This view is consistent with other findings that exposure to training, while important, is not sufficient on its own (Garner, 2009; Miller et al., 2006). This has important implications for planners and trainers in practice, where training is often viewed as a singular event.

The variety of methods employed in these studies testifies to the flexibility of the ORC tool developed by Lehman et al. (2002). However, there is a general lack of conceptual clarity in relation to ORC and authors have argued that there are as many conceptualisations of ORC as there are researchers studying the phenomenon (Stevens, 2013). It should also be taken into consideration that in healthcare, researchers have only recently began to apply models of ORC, which are typically multi-faceted and complex. As such, there is still a lack of methodological detail around how theoretical perspectives, frameworks and models can be operationalised (Attieh et al., 2013). This paper illustrates that one interpretation of ORC by Lehman et al. (2002) has been utilised relating to innovation adoption in the substance misuse field. This interpretation of ORC has principally been utilised as a general measure of readiness or organizational functioning, while other interpretations of ORC may view the valence of a specific change, or staff perceptions of 'the change message', as being a key component (Armenakis et al., 1993; Weiner, 2009). Although it has been widely used, the interpretation of ORC by Lehman et al. (2002) is not definitive, and the implications for the differences in interpretations of ORC in practice remain unclear.

It is evident (see Table 2) that positive staff perceptions of ORC across different subscales and ORC domains are related to similar findings, such as the preferences around or support for the use of EBP's. This suggests that there may be a number of causal relationships between ORC domains. The extent of this causal relationship between domains remains unclear, and only one study attempted to explore this (Joe et al., 2007). In this study, counsellors with the poorest perceptions of climate and attributes were categorised into an 'isolated' group as opposed to 'integrated' or 'exceptional'. The authors support the hypothesis that there are causal relationships between ORC domains, as perceptions of resources and program needs were predictive of group membership. This finding may have implications for those who wish to improve the overall utility of this tool. Further exploration of these relationships could help planners to tailor interventions specific to an organization's needs. In future, if an ORC assessment is to become the norm when planning and implementing new innovations, a valid and reliable brief ORC assessment tool may be more suitable for busy clinical environments (Khan et al., 2014).

In programs where staff express that they have higher motivation for change and poorer resources, they also have more specific training needs and have a greater desire for scientifically based training. The same staff are likely to have been exposed to training less frequently, identify that there are more barriers in respect of training implementation, and tend to work in organizations with a climate that is less favourable in terms of supporting the process of innovation adoption. Organizations with poorer resources are more likely to support inappropriate treatment approaches and be more confrontational towards clients (Fuller et al., 2007). The importance of staff having access to resources such as e-communication in order to facilitate the process of adopting new innovations is clear (Fuller et al., 2007; Lehman et al., 2012; Lundgren et al., 2012). We know that internet based learning in healthcare is at least as effective as traditional training (Cook et al., 2008; Sinclair, Kable, Levett-Jones, & Booth, 2016) and that the frequency of exposure to training and new innovations is also an important determinant of innovation adoption (Lundgren et al., 2013). This review did not find that having access to e-communication increases the frequency of exposure to training, but the benefits of having easy access to up to date information are clear, and the findings on the importance of having workplace internet access is worthy of further exploration. It may also be the case that changes technology, such as the increased use of smartphones, tablets and improved wi-fi access, has increased staff access to e-communications since these studies were conducted. The studies included in this review do not demonstrate with consistency that there is a causal relationship between having access to e-communication and more overall resources.

Staff attributes, such as having more opportunities for growth and in particular having greater influence with peers, are also important factors in the adoption process (Courtney et al., 2007; Lundgren et al., 2012; Lundgren et al., 2013). It may be necessary to tailor the process of innovation adoption to the specific needs of particular staff. Feeling influential in your workplace is important in terms of supporting innovations, but can also have negative implications for more experienced staff (Fuller et al., 2007; Lundgren et al., 2013). In this context, studies

showed that staff who see themselves as having greater attributes will support innovation adoptions more effectively, but experienced staff who see themselves as having more influence with their colleagues can show less fidelity to new practices. Where ORC was assessed in other studies, programs are significantly better at engaging clients where counsellors perceive themselves as having more influence with peers (Greener, Joe, Simpson, Rowan-Szal, & Lehman, 2007; Lehman et al., 2002). The implication is that those who see themselves as having more influence, possess personal attributes with which they can more effectively engage clients (Greener et al., 2007). In business and public sectors contexts, more empowered employees have been shown more to be more supportive of organizational change (Butts, Vandenberg, DeJoy, Schaffer, & Wilson, 2009; Fernandez & Moldogaziev, 2010). Arguably, in the substance misuse treatment context, staff who view themselves as being more influential with their peers are more likely to be empowered to support innovation adoption, but this is a finding which merits further attention. Overall, the influence of these opinion leaders in terms of adopting new innovations can be both good and bad and warrants consideration (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004).

A positive organizational climate can effectively influence the overall functioning of organizations (Zhang & Liu, 2010). This review certainly supports this conclusion with staff ratings of stress having a particularly important influence. Programs in which staff have had more favourable views of organizational climate clearly have a particular advantage in terms of adopting new practices. Programs with favourable organizational climates and less stress are more likely to support the process of innovation adoption and change (Joe et al., 2007; Lundgren et al., 2012). Most importantly, a positive organizational climate has been shown to have implications for sustaining the use of innovations, and improving client outcomes (Simpson et al., 2007). Perceived deficits in organizational climate, such as greater perceived organizational stress or poor openness to change, can also increase the likelihood of staff wanting to engage in a change process. It could be argued that areas such as mission clarity, communication and openness to change can be addressed in an organizational setting without having to call on significant additional resources.

Assessing ORC variables in conjunction with other program or staff related factors should provide richer information for treatment program design, such as the need to consider the quality of training, staff workloads and stress or the need to hire more educated staff if innovations are to be adopted successfully (Joe et al., 2007; Lehman et al., 2012; Lundgren et al., 2011a; Lundgren et al., 2012). A more highly resourced program with a favourable organizational climate, that is affiliated to a research institution is much more likely to be successful in supporting new innovations. When compared to other areas of healthcare, staff working in substance misuse programs are at particular risk of high stress and burnout (Oyefeso, Clancy, & Farmer, 2008). Staff who have more reasonable workloads are not at risk of burnout and are better suited to supporting the use of innovations. Also identified in this review, is that more educated staff are also more likely to support innovations in practice, but it is also important to consider the staff skill mix in terms of how it may impact on staff cohesion (Courtney et al., 2007). There are also studies which have shown that those with lower levels of education are more likely to have positive views of organizational climate and resources (Krull, Lundgren, & Beltrame, 2014). This contradiction may provide a direction for future research. Program director's perceptions in ORC domains can also be different from those of their staff and this may have implications for planners. The type of innovation proposed can also determine its success or failure within the same organization. Some innovation types, such as motivational interviewing, were shown to be more likely to be successfully implemented than others.

It is important to acknowledge that other reviews have identified successful implementation strategies which may be of interest to planners (Powell et al., 2012; Rye & Kimberly, 2007). Identifying staff champions, increasing staff involvement in change, increasing incentives, developing academic partnerships and improving the physical working environment and audit have been identified as measures which can successfully improve the likelihood of implementation of new innovations. Multi-faceted approaches, which include strategies such as individual coaching and provision of ongoing performance feedback or providing incentives to the wider organization may also be effective (Rycroft-Malone et al., 2004). Proposed solutions such as these, require further exploration and development subsequent to the measurement of ORC. This will help to increase the utility of ORC tool's in practice. It is evident from this review that each organization has its own set of unique and complex dynamics. Developing a prescriptive approach to addressing each ORC attribute is likely to have limited success. Overall evidence on how to address organizational deficits as they arise is notable for its absence across healthcare research, and requires further development.

4.1. Limitations

This review was restricted to examining innovation adoption and ORC substance misuse programs only and excluded other areas of healthcare and industry. A broad range of change readiness literature which did not relate to ORC was therefore excluded from this review. In studies beyond the scope of this review, ORC has been related to improved client outcomes (Greener et al., 2007). Inclusion of these studies may have provided further validation for the use of the ORC tool as an assessment measure. A review which had a broader scope would have yielded greater potential use for both researchers and practitioners in the field. ORC should not be viewed as a static concept and should be measured over time as organizational circumstances evolve (George & Jones, 2001; Rowan-Szal et al., 2007; Stevens, 2013). The majority of the studies included in this review were cross sectional. Many of the findings in these papers were self-reported and the cross sectional nature of these studies did not allow follow up on the sustained implementation of innovations in practice. Convenience sampling was used and most of the studies were conducted in the US, therefore the generalisability of the results is not clear. However, it is promising that three international studies which did not fall within the scope of this review, used the Lehman et al. (2002) tool to measure ORC in substance misuse programs, and have yielded results which were consistent with those found in the US (Bowles, Louw, & Myers, 2011; Rampazzo, De Angeli, Serpelloni, Simpson, & Flynn, 2006; Simpson et al., 2009).

5. Conclusion

Despite the heterogeneity of methodologies and outcome measures, this review found that the overall evidence for the use of ORC measurements in predicting the adoption of innovations is positive. Staff perceptions of ORC are significantly associated with the process of innovation adoption. Measuring ORC in conjunction with other variables provides an enhanced ecological perspective of how substance misuse treatment programs work. Utilizing the ORC tool included in this review can provide key information on how the innovation process can be systematically enhanced. Unfortunately, there is minimal evidence for utilizing ORC measurements in the sustained practice of innovations and in quality improvement initiatives, and more work is required in this regard. More methodologically robust prospective longitudinal studies which carefully examine the relationship with ORC and the entire process of innovation adoption are needed. In the absence of resources for large studies, which would require multivariate analysis, opting for a mixed methods approach to investigating effective innovation adoption may be preferable. A lack of conceptual clarity around ORC continues to present additional challenges for researchers and practitioners but the tool developed by Lehman and colleagues provides a good foundation for progress. Standardized measures for the innovation adoption process require further development. Overall, planners should consider

addressing infrastructural deficits before wasting resources on training, and the overall focus should shift to examine the effectiveness of complete innovation adoption once training is provided.

Conflicts of interest

None.

Appendix 1. Search strategy

1. S1: Terms associated with readiness, organizational change, innovation and implementation

(TI(Capability OR preparedness OR acceptance OR willingness OR capacity OR commitment OR participat* OR chang* OR innovat* OR transform* OR efficienc* OR implement* OR disseminat* OR function* OR effectiv* OR climate OR engagement) OR AB(Capability OR preparedness OR acceptance OR willingness OR capacity OR commitment OR participat* OR chang* OR innovat* OR transform* OR efficienc* OR implement* OR disseminat* OR function* OR effectiv* OR climate OR engagement) AND (TX (Readiness)

2. S2: Terms associated with organizations, teams and individuals

(TI(Organiz* OR organis* OR institution* OR team OR individual OR program* OR work* OR service OR system) OR AB(Organiz* OR organis* OR institution* OR team OR individual OR program* OR work* OR service OR system)

3. S3: Terms associated with substance misuse and associated treatment services

(TI(cocaine OR crack OR opi* OR heroin OR amphetamine* OR methamphetamine* OR MDMA OR ecstasy OR methylenedioxymethamphetamine OR cannabis OR marijuana OR psychedelic OR mushroom OR glue OR inhalant OR poly* OR substance* OR drug misuse OR drug abuse OR addict* OR dependen* OR drug treatment* OR drug counsel* OR treatment program* OR drug user*) OR AB(cocaine OR crack OR opi* OR heroin OR amphetamine*OR methamphetamine* OR MDMA OR ecstasy OR methylenedioxymethamphetamine OR cannabis OR marijuana OR psychedelic OR mushroom OR glue OR inhalant OR poly* OR substance* OR drug misuse OR drug abuse OR addict* OR dependen* OR drug treatment* OR drug counsel* OR treatment program* OR drug user*).

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Appendix 4 Systematic Review 2: The relationship between staff perceptions of organisational readiness to change and client outcomes in substance misuse treatment programmes



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The relationship between staff perceptions of organizational readiness to change and client outcomes in substance misuse treatment programmes: A systematic review

Peter Kelly [a], Josephine Hegarty[b], Joe Barry[d], Kyle R. Dyer[c,*], and Aine Horgan[b]

[a]Department of Nursing and Healthcare, Waterford Institute of Technology, Waterford, Ireland; [b]School of Nursing and Midwifery, Brookfield Health Sciences Complex, University College Cork, Cork, Ireland; [c]Institute of Psychiatry, Department of Psychology and Neuroscience, Kings College London, 4 Windsor Walk, Denmark Hill, London, SE58BB, United Kingdom; [d]Department of Public Health and Primary Care, Trinity Centre for Health Sciences, Trinity College Dublin, Dublin, Ireland

ABSTRACT

Organizational readiness to change (ORC) is a fundamental concept within the field of organizational development and has been operationalized in substance misuse treatment. The aim of this review was to describe the relationship between staff perceptions of ORC and outcomes in substance misuse treatment services. This systematic review adhered to PRISMA guidelines. Eight papers were identified for inclusion. All papers utilized the same tool or a modified version of the same tool to measure ORC. Four of these papers used the same tool to measure client outcomes. The quality of the included papers was fair, and the level of evidence was low in respect of evidential hierarchy. ORC is predictive how effectively programs can deliver treatment. Positive ORC measurements relate to better staff/client relationships, reduced substance misuse, and better overall treatment engagement. Effectively resourced programs are more likely to have a more favorable ORC assessment, but resources are not the only determinant. Staff dynamics are important, and having a good organizational climate is of particular importance. There is limited evidence available on how to address ORC deficits. Understanding which organizational attributes are more effective than others could provide important information for policy makers and planners, but more evidence is required.

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Introduction

It has been established that providing quality treatment in substance misuse is important, and that some substance misuse treatment services are more effective than others in determining outcomes for clients (Broome, Flynn, Knight, & Simpson, 2007; Ghose, 2008; Simpson et al., 2009). More effective programs yield greater levels of psychosocial functioning and reductions in drug and alcohol use through more effective engagement and retention of clients (Gossop, 2006b; Greener, Joe, Simpson, Rowan-Szal, & Lehman, 2007). Increased retention in treatment, in particular for problem opiate users, is associated with a reduction in a wide range of drug-use-related risks including mortality (Darker, Ho, Kelly, Whiston, & Barry, 2016; Ghose, 2008; Gossop, 2006b). The societal benefits of providing treatment are also well known, and it is accepted that the provision of treatment offers significant economic benefits through reducing harms, such as the spread of blood borne viruses and a reduction in criminal activity (Comiskey et al., 2009; Godfrey, Stewart, & Gossop, 2004; Gossop, 2015).

We still know relatively little about the components, process, and dynamics of treatment. Treatment can be difficult to conceptualize, and when calling for further examination of how and why treatment is effective, researchers have often referred to these unknowns in colloquial terms as a "black box" (Gossop, 2006a). This view has been sustained partially because the approach to research which is related to the effectiveness of public health interventions has traditionally focused on categorical factors, or disease states. There is a dearth of research that examines the systems which can support the development of effective programs (Cioffi, Lichtveld, & Tilson, 2004; Ghose, 2008). Gerstein and Harwood (1990) observed over two decades ago that this was reflected in the main body of research into substance misuse treatment where the question "does treatment work?" has been asked far more frequently than "why" or "how" does treatment work? Ethridge and Hubbard (2000) suggest that this may have occurred due to the complexity of variables involved and lack of a suitable framework for organizing or evaluating services.

It has been widely acknowledged in the substance misuse treatment field that the organization of treatment systems, the workforce, and their overall effectiveness is determined by a plethora of dynamic cultural, socio-economic, and political influences (Butler, 2011; Kaplan, 2003; Roche & Pidd, 2010). In this context, substance misuse treatment is not exceptional from other areas of healthcare in that the complex

CONTACT Peter Kelly, pkelly@wit.ie Waterford Institute of Technology School of Health Sciences, Nursing, Cork Rd, Waterford, Ireland.
Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/ijsu.
*Present address: Institute of Psychiatry, Psychology & Neuroscience, King's College London, 16 De Crespigny Park, London SE5 8AF, UK.
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infrastructure which sustains treatment programs, influence how effectively they can deliver care (Mclellan, Carise, & Kleber, 2003). These influences are important, and systemic changes to the structures around treatment programs which have occurred because of resource allocation or shifts in government policy, have often provoked leaders in the addictions field to voice concerns based on their "real world" experiences in practice. Unfortunately, tangible evidence to support these concerns may not become available until long after the changes have taken place.

The introduction of competitive tendering in the UK resulted in a multitude of concerns being raised over time by leaders in the addictions field (Drummond, 2009; Geel, 2009; Jones, 2009; Mcgrail, 2014a, 2014b). Their concerns related not just to resource allocation, but also to the reconfiguration of services, the process of tendering itself, and the consequences of this on patient and staff wellbeing. In a period spanning over 10 years, during a time of financial austerity, it has been argued that a shift toward a more functionalist approach to treatment delivery has resulted in more target focused services, increased workloads, a reduction in the numbers of healthcare professionals in services, and lower standards of clinical governance (Drummond, 2009; Jones, 2009; Middleton, Mcgrail, & Stringer, 2016). In other areas of healthcare, it has been determined that shifts toward a more market driven, functionalist approach have resulted in a reduction in the numbers of trained staff, compromises to effective organizational functioning and other systemic compromises, which have resulted in detrimental outcomes for patients, including increased mortality (Francis, 2013; Mccloskey & Diers, 2005). In substance misuse treatment internationally, there is a lack of empirical evidence on the impact of how changes like these can affect clients and staff.

In Europe, per capita, both the UK and Ireland have had particularly high and increasing rates of drug-related mortality. Over the period 2004–2014, Irish data show increases in drug-related deaths of 62% (Lynn & Lyons, 2016). In the UK, between 2012 and 2015, drug deaths by poisoning increased by 65.7% while opiate-related deaths increased by 107% (Office for National Statistics, 2016). The increase in drug-related deaths in the U.K. has been partially attributed to changing demographics of drug users and the availability of more lethal drugs (Public Health England, 2016). Irish analysis also discusses high mortality figures in the context of the changing characteristics of the drug using population (Lynn & Lyons, 2016). However, in the UK, concerns raised earlier by leaders in this field regarding the detrimental effects of service re-configuration on clients, such as increased mortality, have gone largely ignored (Middleton et al., 2016). The absence of quality data on how organizational factors such as resources, needs, governance and organizational climate can determine client outcomes in substance misuse treatment services, has arguably allowed policy makers and others to easily prioritize change based on short term financial priorities (Mcgrail, 2014a). It has been argued that this has resulted in a deterioration in the quality of treatment services. Paradoxically, reducing expenditure on treatment is likely to have resulted in an increase of total costs which will be borne in other areas, such as the criminal justice system (Godfrey et al., 2004).

Substance misuse treatment programs operate as a part of a complex eco-system, and over several decades, attempts have been made to understand treatment delivery from a systemic perspective (Baker & Roche, 2002; Ethridge & Hubbard, 2000; Ghose, 2008; Gossop, Stewart, & Marsden, 2003; Mulvey, Hubbard, & Hayashi, 2003; Roche, 2001; Roche, Nicholas, Adams, White, & Battams, 2013; Simpson & Dansereau, 2007). Effective measurement of entire systems, which incorporate a multitude of dynamic socio-political and economic variables is problematic as treatment effectiveness is influenced through a multitude of complex interdependent factors. Despite this, if we are to optimize the resources available to us in order to provide better treatment, it is imperative that we develop a better understanding of what these factors are, and how they inter-relate. To prioritize focused and effective efforts to improve services, Simpson et al. (2009) argue that it is also of paramount importance to understand which aspects of organizational structures and treatment processes are better than others.

Client outcomes at an organizational level, have been shown to be influenced by factors such as the competency, education and training of staff, prescribing practices, quality of therapeutic relationships, client characteristics and attitudes, resources, workload, motivation and organizational functioning (Bell, 2012; D'aunno & Vaughn, 1995; Darker et al., 2016; Heinrich & Lynn, 2002; Kelly, O'grady, Brown, Mitchell, & Schwartz, 2010; Meier, Barrowclough, & Donmall, 2005; Simpson, 2004). There is still not enough evidence to show how many of these can be developed systematically (Bell, 2012). A focus on systems and their dynamics has resulted in a conceptualization of organizational frameworks for addiction treatment services. These conceptualizations have incorporated factors such as policy, organizations, teams, individual skills, experience and training (Roche & Pidd, 2010; Simpson, 2004). However, understanding and effectively influencing this entire system presents a significant challenge to researchers and practitioners. Further understanding of the factors which affect "how" and "why" treatment works is still required. In response to this, advocates of a systemic approach have suggested measuring the success or failure of systemic changes at the organizational level, which is at the interface between the client, their treatment program, and the determinants of effective treatment (Jacobs and Hawley, 2009; Kaplan, 2003).

Across the business and healthcare sectors, organizational readiness to change (ORC) is widely recognized as one of the most important concepts regarding organizational success (Armenakis, Harris, & Mossholder, 1993; Ford & Foster-Fishman, 2012; Weiner, Amick, & Lee, 2008). In contrast to a functionalist interpretation of organizations, this "human relations" based concept acknowledges that human emotions and interpersonal dynamics are important components of effective organizational functioning (Burnes & Cooke, 2012). In a range of settings across the substance misuse field, ORC has been measured in conjunction with other variables to effectively describe organizational functioning (Simpson et al., 2009). Several of these studies have utilized the ORC questionnaire developed by Lehman, Greener, and Simpson (2002). This tool measures areas of organizational functioning such as motivation, staff attributes, institutional resources and

organizational climate and several studies have found these scales to be predictive of client engagement (Greener et al., 2007; Guerrero, Fenwick, Kong, Grella, & D'aunno, 2015; Lehman, Greener, Rowan-Szal, & Flynn, 2012). The focus of this review is to analyze empirical papers which examine the relationship between all interpretations of ORC when it is measured, and client outcomes in substance misuse treatment. Client outcomes were interpreted as being any client-related measures impacted by accessing substance misuse treatment services.

Methods

A systematic literature search was performed following PRISMA (Preferred reporting items for systematic reviews and Meta-analysis) guidelines (see Figure 1 for PRISMA flow diagram). The search strategy was developed in conjunction with an information specialist and was tailored to find papers relating to ORC and substance misuse treatment programs. Terms used in the search were combined using the Boolean terms AND/OR as appropriate (see Appendix 1 for search strategy).

Identification of eligible studies

Peer reviewed academic papers published in the English language from 2001 to 2016 were searched for using the electronic data bases MEDLINE, PsychINFO, SOCindex and Business Source Complete. This search generated 1770 hits which were added to an electronic reference manager system where duplicates were removed and 1585 papers remained. The papers were independently screened by two investigators (AH,PK) by title and abstract. Only papers which did not relate to ORC and substance misuse treatment were excluded initially. Following this, the full text of selected papers was appraised. Reference lists of included papers were also checked for potential papers and five papers were deemed suitable for full text review. None of these five papers met the inclusion criteria for this review. A third reviewer (JH) was available for arbitration in resolving discrepancies if necessary. Study designs where ORC in substance misuse treatment programs was measured were included where its measurement was related to any treatment-related benefit or outcome (see Outcomes measured). All treatment-related benefits or measures as described by included papers were considered as eligible, where they were related to ORC. Due to differences in their organizational structures and the determinants of these structures, such as funding streams and policy frameworks, papers relating specifically to correctional

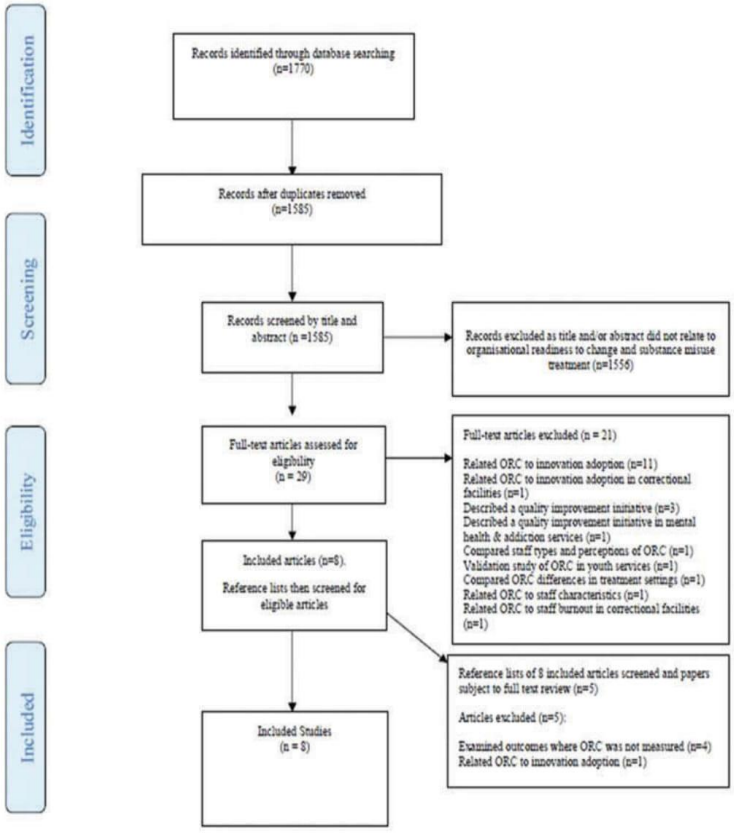


Figure 1. PRISMA flow chart.

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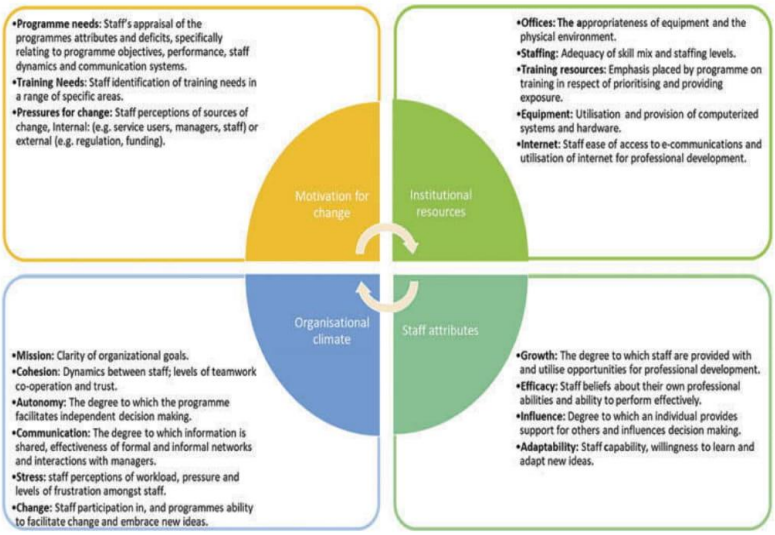


Figure 2. The four domains and 18 subscales of ORC and what they measure.

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facilities, adolescent only services, or mental health treatment services were excluded. Where data relating to ORC could not be extracted, pilot studies, theoretical papers, study protocols and studies investigating construct validity were also excluded. Summary data tables were developed with the following headings: author, country, aim, study design, sample/detail, outcome, instruments used and definition of ORC, relationship between ORC and outcomes; key findings, quality assessment and further comments/ other key findings. Following this, the findings were narratively synthesized using both the original papers and key data from the completed tables.

Quality appraisal

In order to reduce the risk of bias and increase rigor in systematic reviews it is important to use a quality appraisal tool to assess included papers (Jarde, Losilla, & Vives, 2012). Two investigators (PK and KD) independently quality assessed the included papers using the NIH Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies (national Heart Lung and Blood Institute, 2016). The methodological quality of all of the included papers was graded according to 14 criteria. Using these criteria, rigor was assessed in areas such as eligibility criteria, outcome measures, timeframes, exposures, and sample size. A score was then calculated based on the quality of the studies and was ranked as poor (0%), fair (100%), or good (0%). Overall, response rates in these papers varied and while inclusion/exclusion criteria were rarely stated, the large samples sizes give some reassurance of representativeness and generalizability.

Results

A total of 1,585 articles were retrieved after removal of duplicates and 8 studies were identified as eligible. All reference lists from included papers were checked and five further studies were subject to full text review, but did not meet the inclusion criteria for this study. All of the eight included studies were of cross-sectional study design with one of these using mixed methods and one study was conducted in the United Kingdom with the remainder being conducted in the United States. The studies were conducted across a range of settings which included community outpatient drug free and substitute prescribing services.

Instruments

All of the eight studies measured ORC using the full tool or a version of a tool developed by Lehman et al. (2002; see http://ibr.tcu.edu/forms/organizational-staff-assessments/). The ORC assessment tool (Lehman et al., 2002) of organizational needs and functioning, used in all of these studies, have four domains which include 18 subscales: (i) Motivation for change (needs/pressures): program needs, training needs, pressures for change. (ii) Resources: Offices, staffing, training, equipment, internet. (iii) Staff Attributes: Growth, efficacy, influence, adaptability. (iv) Organizational Climate: Mission, cohesion, autonomy, communication, stress, openness for change. Within the 18 subscales, this tool includes a total of 118 scaling questions. For an overview of the domains and subscales measured using the ORC assessment tool, see Figure 2. Other measurement tools which were utilized in the included studies were the Client Evaluation of Self and Treatment (CEST) tool (Joe, Broome, Rowan-Szal, & Simpson, 2002), which was used in four of the studies and the Multi-Factor Leadership Questionnaire (Edwards, Knight, Broome, & Flynn, 2010) which was used in three of the studies. Other tools used included a Therapeutic Alliance Measure (Crits-Christoph et al., 2004), a shortened version of the Addiction Severity Index (Mclellan, Luborsky, O'brien, & Woody, 1980), a Cultural Competence Self-assessment Questionnaire (Mason, 1995), the Program Identification Form (Lehman et al., 2002)

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Table 1. ORC and client outcomes: extraction table.

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: key findings 9. Quality assessment 10. Further comments/ other key findings
1. Broome et al. (2007). 2. United States. 3. To explore the relationship between program structure, organizational functioning (ORC), client background and client engagement with treatment (satisfaction, rapport and participation). 4. Cross-sectional survey	5. 94 out-patient drug free treatment programs in 9 US states. 5,013 clients, 546 counselling staff, 94 program directors or managers from out-patient addiction treatment centers for adults. 6. Treatment engagement, client background, organizational structure, organizational functioning. ORC was used to measure organizational functioning. Selected ratings scales were used in the analysis; measures of organizational climate (mission, cohesion, autonomy, communication stress and openness to change) were expressed as a composite score and two measures of staff attributes (growth and efficacy) were used. (i) TCU Survey of structure and operations (SSO)- Texas Christian University (ii) TCU Survey of Organizational functioning (SOF), which includes ORC questionnaire (Lehman et al., 2002) (iii) Client Evaluation of Self and Treatment (CEST)- (Joe et al., 2002). (iv) Questionnaire on professional community work practices was devised on measures developed by (Bryk et al., 1999) on peer collaboration, deprivatized practice, reflective dialogue, focus on outcomes, collective responsibility, and counsellor socialization. (v) Multi-dimensional concept of ORC (Lehman et al., 2002)	8. Where staff reported a more positive work climate and were more confident about their attributes client engagement was more favorable. Correlations of program level covariates with engagement ratings showed that clients reported higher engagement with services where staff reported higher efficacy ($p < 0.05$). Comparisons of models coefficients demonstrated that engagement ratings were more favorable where staff reported higher ratings of organizational climate ($p < 0.01$) and in the staff attributes domain; efficacy ($p < 0.01$). 9. Fair 10. Non-ORC findings were that engagement was significantly more favorable in programs which were smaller, that were accredited by one of two accreditation bodies, where staff had lower caseloads, which had a less differentiated service approach and where staff felt a greater sense of professional community. Combined analysis shows importance of the combination of variables over a single component. Analysis of client characteristics showed that females, older clients and clients who were longer in treatment had more favorable views of treatment.
1. Crits-Christoph et al. (2011) 2. United States (i) To evaluate the extent to which patient, therapist, or program characteristics influence the therapeutic alliance and drug and alcohol use. (ii) To investigate whether alliance mediates the relationship between program (iii) characteristics and ongoing drug and alcohol use. 3. Cross-sectional survey	4. 1613 clients, drawn from a randomized clinical trial and 112 counsellors from 20 community based non-methadone prescribing out-patient SM clinics. Randomization was staggered: patients attended group counselling over 12 week period. Data was used from two groups, measures obtained at week 1 and week 12. 5. Attendance at structured community treatment-Group counselling 6. Recent drug and alcohol use, therapeutic alliance for clients and Organizational readiness to change (needs and motivation for change, resources, staff attributes and organizational climate). (i) Therapeutic alliance measure: 4-item scale (Crits-Christoph et al., 2004) (ii) 2 items from Addiction Severity Index (Mclellan et al., 1980) (iii) ORC questionnaire (Lehman et al., 2002) (iv) Multi-dimensional concept of ORC (Lehman et al., 2002)	7. Without therapeutic alliance in the model which was not significantly related to drug and/or alcohol use in the past week the following relationships with ORC were evident: In the motivation/needs domain, higher program needs was related to greater alcohol use ($p = 0.048$). In the organizational climate domain better perceptions of staff cohesion was related to less alcohol or drug use ($p = 0.007$), less alcohol use ($p = 0.024$) and less drug use ($p = 0.012$) and better staff perceptions of program communication was related to less drug use ($p = 0.037$). In the resources domain better perceptions of program staffing was related to less drug and alcohol use ($p = 0.036$). In the staff attributes domain, positive staff perceptions of influence were related to: less alcohol use ($p = 0.006$) or less drug use ($p = 0.026$) and (combined) less alcohol or drug use ($p = 0.002$). 8. Fair 9. Therapeutic alliance was not significantly related to drug and/or alcohol use during the past week. Therapeutic alliance did not significantly mediate the relationship between ORC and drug and alcohol use. Clients were able to relate better to counsellors in some programs better than others independent of any impact from the counsellor, indicating that unknown program variables were affecting the therapeutic alliance.

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Table 1. (Continued).

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: key findings 9. Quality assessment 10. Further comments/ other key findings
1. Greener et al. (2007) 2. United States 3. To investigate the relationship between organizational functioning and client engagement in treatment: (i) To measure the extent to which the 18 ORC scales and composite scores for the four sub-domains are predictive of 3 client outcomes; counsellor rapport, satisfaction with treatment and treatment participation (ii) To investigate if an overall composite values based on the 4 subdomains would have a predictive value as an indicator of climate 4. Cross-sectional survey	5. 531 clinical and counselling staff and 3.475 clients in 163 substance misuse treatment programs 6. Counselling rapport, treatment satisfaction, treatment participation and ORC composite scores index: Motivation for change/needs and pressures (NPI), Institutional resources (IRI), Staff attributes (SAI), Organizational Climate (OCI) (i) Organizational readiness to change staff version (ORD-S) (Lehman et al., 2002) (ii) ORC-D (directors version) (Lehman et al., 2002) (iii) Client Evaluation of Self and Treatment; CEST (Joe et al., 2002) (iv) Multi-dimensional concept of ORC (Lehman et al., 2002)	8. Institutional resources and organizational climate were the most highly correlated domains. Staff perceptions of high program needs are associated with low scores on all client engagement criteria. The overall findings confirm that counsellor rapport and treatment satisfaction were higher among clients who are treated in healthier organizational settings. Correlations of ORC domain composite scores (and significant subscales) with counsellor rapport (CR) treatment satisfaction (TS) and treatment participation (TP) were: Motivation/needs: CR ($P < 0.05$), TS (0.05) with only program needs being significant for both CR and TS. Institutional resources: CR ($p < 0.001$), TS ($P < 0.001$) with offices, staffing, equipment and internet being significant for CR and TS. Staff attributes: CR ($P < 0.05$), TS ($P < 0.05$), TP (<0.05) with influence being significant for all 3 outcome measures. Organizational climate: CR ($p < 0.01$), TS ($p < 0.01$) with mission, autonomy, communication, stress and change being significant for CR and TS and cohesion being significant for CR only. Multiple regression using ORC domains (composite scores and subscales) to predict counsellor rapport (CR) treatment satisfaction (TS) and treatment participation (TP) were: Motivation/needs; program needs: CR ($p < 0.01$), TS ($p < 0.001$), TP ($p < 0.05$) Institutional resources; CR($p < 0.05$) TS ($p < 0.05$) staffing: CR ($p < 0.001$), TS ($p < 0.001$), equipment CR ($p < 0.01$) TS ($p < 0.01$), internet CR ($p < 0.05$), TS ($p < 0.05$) Staff attributes; influence: CR ($p < 0.001$) TS ($p < 0.001$) TP ($p < 0.001$) Organizational climate; mission: CR ($p < 0.01$) TS ($p < 0.05$) TP ($p < 0.05$), cohesion: CR ($p < 0.05$), autonomy: CR ($p < 0.01$) TS (0.01), communication: CR ($p < 0.01$) TS ($p < 0.01$), stress: CR ($p < 0.05$) TS ($p < 0.01$), change: CR ($p < 0.05$) TS ($p < 0.05$) Staff attributes: influence scale was significant in predicting CR ($p < 0.05$). 9. Fair 10. N.A.

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Table 1. (Continued).

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: key findings 9. Quality assessment 10. Further comments/ other key findings
1. Guerrero et al. (2015). 2. United States. 3. To explore the relationship between program capacity (leadership, organizational readiness to change and acceptance of medical aid or Medi-Cal for low income individuals) and improved treatment for ethnic minorities as evidenced by: a. Shorter treatment waiting time and treatment retention in addiction health services b. Better coordination between addiction health services such as mental health services c. Improved access to HIV testing services 4. Cross-sectional survey	5. 108 addiction health services programs including one supervisor from each program (n = 108). Data from 13,478 client treatment episodes was also used to analyze retention. Areas with a population of 40% or more African American or Latino residents or both were selected. Waiting time was self-reported by clients. Coordination with mental health services was self-reported by supervisors using a scaling questionnaire. HIV testing rates were measured by asking clients on discharge if they had received testing on or off site whilst in treatment. 6. Program capacity measured by: leadership, organizational readiness to change (needs and motivation for change, resources, staff attributes and organizational climate), coordination with mental health services, HIV testing rates and acceptance of medical payments. Client waiting time and retention in treatment. (i) Shortened version of ORC-D4 questionnaire (Lehman et al., 2002). 67 questions of 101 in 5 domains were used (ii) Multi-factor leadership questionnaire (Edwards et al., 2010). (iii) Multi-dimensional concept of ORC (Lehman et al., 2002)	7. Organizational readiness to change was expressed as a total composite score and was found to be negatively associated with waiting time ($p < 0.001$); (IRR 0.705, CI 0.679, 0.732) and was positively associated with higher retention in treatment ($p < 0.05$); (IRR 1.014, CI 1.001,1.026) 8. Fair 9. Higher capacity programs are associated with lower waiting times for Latinos and African Americans and better retention of African Americans. This study also reports that higher capacity programs reduce waiting times through better coordination with mental health and HIV services. Better coordination with mental health and HIV testing services was not however associated with better retention in treatment.
1. Guerrero et al. (2016) 2. United States 3. To evaluate the relationship between program capacity i.e. effective leadership, organizational readiness to change, and acceptance of Medi-Cal services (Medi-Cal is state assisted health care cover for low-income individuals in the US) with treatment waiting time and treatment duration in addiction treatment. 4. Cross-sectional survey	5. Client data was collected from 15,100 treatment episodes. Data was also collected from 147 out-patient substance misuse treatment programs chosen randomly from 350 non-profit publicly funded substance misuse treatment programs. Final analytic sample consisted of 97 programs and 8,599 client treatment episodes. 6. Organizational readiness to change (needs and motivation for change, resources, staff attributes and organizational climate), leadership, Medi-cal payment acceptance and Program capacity: wait time and treatment duration (i) ORC-D4 questionnaire (Lehman et al., 2002): shortened version; 68 questions of 101 were used (ii) Leadership scale (Edwards et al., 2010) (iii) Cultural competence self-assessment questionnaire (Mason, 1995) (iv) Multi-dimensional concept of ORC (Lehman et al., 2002)	7. ORC domains were expressed as composite scores. Motivation for change was positively associated with treatment duration (IRR = 1.0011, $P < 0.05$). Staff attributes were negatively associated with treatment duration (IRR = 0.979, $P < 0.01$) 8. Fair 9. High program capacity which incorporated effective leadership, organizational readiness to change, and acceptance of Medi-Cal services was positively associated with treatment duration (IRR = 1.295, $P < 0.001$) and negatively associated with waiting time (IRR = 0.021, $P < 0.001$)

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Table 1. (Continued).

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: key findings 9. Quality assessment 10. Further comments/ other key findings
1. Guerrero et al. (2014) 2. United States. 3. To examine factors associated with readiness to coordinate mental health, public health and HIV testing among community-based addiction health services programs. 4. Cross-sectional survey.	5. Client data was collected from 15,100 treatment episodes. Data was also collected from 147 out-patient substance misuse treatment programs chosen randomly from 350 non-profit publicly funded substance misuse treatment programs. Final analytic sample consisted of 104 programs and 14,379 treatment episodes. 6. Client outcomes self-reported by program supervisors: Frequency of coordination with mental health providers for dual diagnosis clients, frequency of coordination with public health providers and frequency of coordination of on-site and off-site HIV testing. Percentage of public funding, state licensure, accreditation, acceptance of medi-cal (public health cover) payment, 4 measures of ORC and a measure of directors leadership. (i) ORC-D4 questionnaire (Lehman et al., 2002): shortened version; 67 questions of 101 were used (ii) Leadership scale (Edwards et al., 2010) (iii) Multi-dimensional concept of ORC (Lehman et al., 2002)	8. ORC domains were expressed as composite scores. Motivation for change was positively associated with program directors scores of coordination with mental health services ($p < 0.001$) and coordination with public health services ($p < 0.01$). Staff attributes were positively associated with directors scores on clients receiving HIV testing ($p < 0.05$). Organizational climate was positively associated with directors scores of coordination with mental health services ($p < 0.001$) and coordination with public health services ($p < 0.001$). 9. Fair 10. Higher director scores of coordination with mental health were positively associated with accredited programs and methadone programs. Higher director scores of coordination with public health facilities was associated with acceptance of medi-cal and being medi-cal eligible and being referred from a drug court. Finally director scores on the frequency of HIV testing was positively associated with programs being publicly funded, being either a methadone prescribing service or a residential service and clients being homeless.
1. Lehman et al. (2002). 2. United States (i) To describe the psychometric and structural properties of an organizational readiness to change (ORC) questionnaire (ii) To determine similarities in how program directors and staff characterize their programs (iii) To examine how ORC impacts on organizational functioning. Functioning is described as how well patients are engaged with treatment. (iv) To identify how program type and organizational environment are related to components of ORC 3. Cross-sectional survey.	4. 135 program directors and 458 staff from 111 substance misuse treatment programs. Staff and directors completed questionnaires regarding ORC and clients completed questionnaires evaluating their treatment covering three domains of treatment; satisfaction, counsellor rapport and treatment participation. 5. Organizational readiness to change; needs and motivation for change, resources, staff attributes and organizational climate and client engagement as measured by treatment satisfaction, counsellor rapport, participation in treatment and peer support. (i) TCU-ORC-S (staff) and TCU-ORC-D (directors) Lehman et al. (2002) (ii) Program Identification (PID) for (Lehman et al., 2002). (iii) Client Evaluation of Self and Treatment (CEST) (Joe et al., 2002) (iv) Multi-dimensional concept of ORC (Lehman et al., 2002)	6. Results demonstrate that staff perceptions of ORC are predictors of client engagement in treatment. In particular, organizational climate (where five subscales were significant) was important. Staff having greater influence in the staff attributes was the only measure to reach significance across all measurements of client engagement. Office resources in institutional resources was the only other significant variable: In institutional resources, staff perceptions of staffing ($p < 0.05$) were related to greater treatment satisfaction. In staff attributes, influence was significantly related to both higher treatment satisfaction ($p < 0.01$), better counsellor rapport ($p < 0.05$), treatment participation ($p < 0.01$) and peer support ($p < 0.05$). In organizational climate, higher staff ratings of autonomy ($p < 0.01$) communication ($p < 0.05$) openness to change ($p < 0.05$) were associated with higher client treatment satisfaction. While better counsellor rapport in this domain was associated with higher staff ratings of mission ($p < 0.05$) cohesion ($p < 0.05$) autonomy ($p < 0.01$) communication ($p < 0.05$) openness to change ($p < 0.01$). 7. Fair 8. Staff who worked in programs with a more stable or increasing budget and a more predictable environment had significantly more favorable views of their organizations, in particular in the resources and climate domains. Staff and directors differed in their interpretations of training needs (directors higher) and staff attributes (directors lower), but largely agreed in their interpretations of resources and climate.

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Table 1. (Continued).

1. Author 2. Country 3. Aim 4. Study design	5. Sample size/detail 6. Outcome 7. Instruments used and/or definition or theory of ORC	8. Relationship between ORC and outcomes: key findings 9. Quality assessment 10. Further comments/ other key findings
1. Simpson et al. (2009). 2. United Kingdom. 3. To determine if client level of treatment engagement is related to levels of motivation and psychosocial functioning as well as staff perceptions of professional attributes and program atmosphere. 4. Cross-sectional survey	5. 1539 clients were assessed and 439 staff from 44 treatment programs located in northern England. Data obtained from counsellors was matched to corresponding staff to assess if personal interactions were important. 6. Client motivation and readiness for treatment, psychosocial functioning and treatment engagement. Treatment engagement was measured by; treatment satisfaction, counsellor rapport, treatment participation and peer support. Organizational readiness to change; 4 domains are: needs and motivation for change, resources, staff attributes and organizational climate. (i) Client Evaluation of Self and Treatment (CEST) (Joe et al., 2002) (ii) ORC questionnaire (Lehman et al., 2002) (iii) Multi-dimensional concept of ORC (Lehman et al., 2002)	8. This study confirmed that staff perceptions of organizational readiness to change are predictors of client responsiveness to treatment. Findings matched counsellors with their corresponding clients and this showed that the relationships found had a basis in the client/counsellor relationship. In institutional resources, higher staff ratings of training ($p < 0.05$) was related to better treatment participation. In staff attributes, better treatment participation was significantly related to more favorable staff perceptions of growth ($p < 0.001$), efficacy ($p < 0.01$) and adaptability ($p < 0.01$) while counsellor rapport was related to growth ($p < 0.05$). In organizational climate only, staff perceptions of mission ($p < 0.05$) and lower scores on stress ($p < 0.05$) were significantly related to better treatment participation while mission ($p < 0.05$) was related to better counsellor rapport. Data was cross compared with data from a similar US study (Greener et al., 2007) and it was found that data from the UK study was not consistent with US findings. This was attributed to the type of programs included in this analysis and a decision was taken to re-assess results with inappropriate programs excluded. A second analysis was completed which involved 22 programs, which included 142 counsellors and 858 clients. This analysis was more consistent with results found in the US: In institutional resources, more favorable staff views of offices ($p < 0.05$) and equipment ($p < 0.05$) were related to better treatment participation while ratings of training ($p < 0.01$) and equipment ($p < 0.01$) was significantly related to better counsellor rapport. In organizational climate, staff perceptions of cohesion ($p < 0.5$) was related to better treatment participation while more favorable perceptions of cohesion ($p < 0.01$) communication ($p < 0.05$) openness to change ($p < 0.05$) were related to better counsellor rapport. In the refined analysis the organizational climate and institutional resources domains were the most significant in terms of predicting treatment participation and counsellor rapport. 9. Fair 10. The UK sample was compared to a larger US sample and while both the UK and US samples showed staff attitudes to be predictors of client engagement, the predictor profiles differed. This may have been due to differences in sample size and program profiles. Client characteristics were an important predictor of engagement; ratings on treatment motivation and psychological and social wellbeing were predictors of a good therapeutic relationship and participation in treatment.

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and a questionnaire on community work practices based on measures developed by Bryk, Camburn, and Louis (1999).

Outcomes measured

A comprehensive overview of all of the eight included papers is provided in Table 1. A wide range of client outcomes were assessed and these included client satisfaction with treatment, therapeutic alliance, participation in treatment, level of peer support, waiting times, treatment retention and improved access to satellite services for clients. A number of findings related to areas such as client characteristics, service type and staff workloads which were not measured by ORC, but were assessed in the included studies. Four studies examined the relationship between ORC and client engagement with treatment (Broome et al., 2007; Greener et al., 2007; Lehman et al., 2002; Simpson et al., 2009) using the CEST tool developed by Joe et al. (2002). Due to the heterogeneity of sample populations and settings in these four papers, a meta-analysis was considered to have limited value. The CEST tool has 16 (5–12 item) subscales in four domains: treatment motivation, psychological and social functioning, and client engagement. All of these papers reported findings from the client engagement domain only. The client engagement domain includes subscale measurements of client satisfaction with treatment, counsellor rapport, level of participation in treatment and peer support. Joe et al. (2002) describes counsellor rapport and the therapeutic relationship as being the same construct and this paper will make the same interpretation. A fifth study by Crits-Christoph et al. (2011) assessed how patient, therapist, and program characteristics (using ORC measurements) influenced the therapeutic relationship and drug and alcohol use. In the context of these five studies, the study by Broome et al. (2007) was unique in that a shortened version of the ORC questionnaire was used. This measured all six subscales in the organizational climate domain but was limited to two out of four subscales from the staff attributes domain; growth and efficacy. This study also reported composite scores for both client engagement and the organizational climate domains, but provided sub-scale scores for the staff attributes domain. Simpson et al. (2009) reported ORC in relation to treatment participation and counsellor rapport only.

Greener et al. (2007) reported on the relationship between ORC and counsellor rapport, treatment satisfaction and treatment participation while Lehman et al. (2002) reported on all four subscale measures including peer support. The study by Lehman et al. (2002) was principally a validation study that also measured how ORC related to client engagement. The remaining three studies that used the CEST tool (Joe et al., 2002) focused on the relationship between ORC and client engagement measures, which is reflective of the scope of this review. Finally, three studies examined the relationship between ORC and service capacity issues which were reported as having direct benefits for clients (Guerrero et al., 2014, 2015, 2016). These benefits included the accessibility of satellite services such as mental or public health services and/or HIV testing services, capacity to engage publicly funded clients, reduced waiting times and increased retention in treatment. One study used composite scores and a shortened version of the ORC tool and identified that organizational climate was a predictor of treatment engagement and also found that in programs where staff reported higher efficacy, clients also reported better treatment engagement (Broome et al., 2007). To avoid confusion, outcomes are discussed separately, but if they relate to the same paper, they may be discussed together. As all of the included papers utilized an ORC tool developed by Lehman and colleagues, Table 2 provides an overview of how the ORC domains and subscales relate to the outcomes measured. This table arguably provides the most succinct overview of how the variables measured by the ORC tool can relate to treatment delivery. The relationships between subscales and outcomes are described as either being either statistically positive (+) or negative (−) or not significant (NS). An example of a statistically negative relationship is where in the motivation for change domain, higher staff ratings of program needs were related to both lower client ratings of counsellor rapport and treatment satisfaction. Composite scores for domains were used in one of the included papers, and these are also described in this table. For ease of comprehension, some results have been excluded and anomalies have been highlighted. Where this has occurred, this has been appropriately identified at the bottom of the table in accordance with each paper listed (i) to (viii).

Therapeutic relationship and drug and alcohol use

In the three studies that reported using ORC subscales (not composite ORC scores) in conjunction with the CEST engagement measures, on average eight of the 18 ORC subscales were related to counsellor rapport, with the organizational climate domain being the strongest predictor of a good rapport. An average of five of the six subscales in organizational climate were predictive of better counsellor rapport, with only stress having a negative relationship (Greener et al., 2007; Lehman et al., 2002; Simpson et al., 2009). Counsellors who work in programs with greater mission clarity, better cohesion, communication, more staff autonomy, less stress and more openness to change, also create an environment where staff have a better therapeutic rapport with their clients. Institutional resources was the second most significant domain in predicting counsellor rapport with Simpson et al. (2009) finding that office facilities and equipment were important, while Greener et al. (2007) found that four subscales out of five were significant, with training being the exception. Clients are more likely to have a good therapeutic rapport with their counsellors in programs where staff perceive there to be better office equipment, staffing levels, good computer equipment and access to e-communication. Two US studies found that clients who accessed programs where staff saw themselves as having more influence with peers reported better rapport with their counsellors (Greener et al., 2007; Lehman et al., 2002) while in the UK sample, Simpson et al. (2009) did not find any relationship between staff attributes and counsellor rapport.

High program needs were also associated with poor counsellor rapport in one study only (Greener et al., 2007). A key finding in a study by Crits-Christoph et al. (2011) was that variability in the therapeutic alliance at the program and client level had a greater impact on drug and alcohol use than did the alliance at the counsellor level. This means that

Table 2. Overview of ORC relationships.

Domain	Subscales	Relationship with ORC subscales: (+) = statistically positive relationship, (–) = statistically negative relationship, *n* = number of studies citing relationship, NS = no statistically significant relationship
Motivation for change (MFC)	a. Program needs: b. Training needs: c. Pressures for change: d. Composite:	a. (+) alcohol use (*n* = 1: ii), (–) counsellor rapport (*n* = 1:iii), (–) treatment satisfaction (*n* = 1:iii),(–) treatment participation (*n* = 1,iii) b. NS c. (+) organizational certainty (*n* = 1:vii) d. (–) counsellor rapport (*n* = 1,iii), (–) treatment satisfaction (*n* = 1:iii), (+) Treatment duration (*n* = 1:v), (+) program directors scores of coordination with mental health services (*n* = 1:vi)
Institutional resources (IR)	a. Offices: b. Staffing: c. Training: d. Equipment: e. Internet: f. Composite:	a. (+) counsellor rapport (*n* = 1:iii), (+) treatment satisfaction (*n* = 1:iii), (+) organizational stability (*n* = 1:vii), (+) treatment participation (*n* = 1:viii) b. (+) counsellor rapport (*n* = 1:iii), (+) treatment satisfaction (*n* = 2:iii,vii), (+) financial stability (*n* = 1:vii), (+) organizational stability (*n* = 1:vii) c. (+) organizational stability (*n* = 1:vii), (+) counsellor rapport (*n* = 1:viii) d. (+) counsellor rapport (*n* = 2:iii,viii), (+) treatment satisfaction (*n* = 1:iii), (+) organizational stability (*n* = 1:vii), (+) organizational certainty (*n* = 1:vii),(+) treatment participation (*n* = 1:viii) e. (+) counsellor rapport (*n* = 1:iii), (+) treatment satisfaction (*n* = 1:iii) f. (+) counsellor rapport (*n* = 2:iii,viii), treatment satisfaction (*n* = 1:iii), (+) treatment participation (*n* = 1:viii)
Staff attributes (SA)	a. Growth: b. Efficacy: c. Influence: d. Adaptability: e. Composite:	a. (+) organizational stability (*n* = 1:vii) b. (+) Treatment engagement (*n* = 1:i) c. (–) alcohol use (*n* = 1:ii), (–) drug use (*n* = 1:ii), (–) drug and alcohol use (*n* = 1:ii), (+) counsellor rapport (*n* = 2:iii, vii), (+) treatment satisfaction (*n* = 2:iii,vii), (+) treatment participation (*n* = 2:iii,vii), (+) peer support (*n* = 1:vii), d. NS e. (+) counsellor rapport (*n* = 1:iii), (+) treatment satisfaction (*n* = 1:iii), (+) program directors scores of clients receiving HIV testing (*n* = 1:vi) (–) shorter treatment duration (*n* = 1:v)
Organizational climate (OC)	a. Mission: b. Cohesion: c. Autonomy: d. Communication: e. Stress: f. Openness to change: g. Composite:	a. (+) counsellor rapport (*n* = 2:iii,vii), (+) treatment satisfaction (*n* = 1:iii), treatment participation (*n* = 1:iii) (+) organizational certainty (*n* = 1:vii) b. (–) drug or alcohol use (*n* = 1:ii) (–) alcohol use (*n* = 1:ii) drug use (*n* = 1:ii) (+) counsellor rapport (*n* = 3:iii,vii,viii), (+) treatment participation (*n* = 1:viii), c. (+) counsellor rapport (*n* = 2:iii,vii), (+) treatment satisfaction (*n* = 2:iii,vii) d. (–) drug use (*n* = 1:ii) (+) counsellor rapport (*n* = 3:iii,vii,viii), (+) treatment satisfaction (*n* = 2:iii,vii), (+) financial stability (*n* = 1:vii), (+) organizational stability (*n* = 1:vii) e. (–) counsellor rapport (*n* = 1:iii), (–) treatment satisfaction (*n* = 1:iii), (–) organizational stability (*n* = 1:vii), (–) organizational certainty (*n* = 1:vii) f. (+) counsellor rapport (*n* = 3:iii,vii,viii), (+) treatment satisfaction (*n* = 2:iii,vii), (+) financial stability (*n* = 1:vii), (+) organizational stability (*n* = 1:vii) g. (+) Treatment participation (*n* = 1:viii), (+) counsellor rapport (*n* = 2:iii,viii) treatment satisfaction (*n* = 1:iii), (+) Treatment engagement (*n* = 1:i), (+) program directors scores of better coordination with mental health services (*n* = 1:iv), program directors scores of better coordination with public health services (*n* = 1:iv)
ORC as a composite score	————	(+) higher retention in treatment (*n* = 1:iv) (–) waiting time for treatment (*n* = 1:iv)

(i) Broome et al. (2007): Ratings of treatment satisfaction, counsellor rapport, and treatment participation were expressed as a composite score; described as treatment engagement. Ratings of OC were expressed as composite score.
(ii) Crits-Christoph et al. (2011): Results provided are without therapeutic alliance in model.
(iii) Greener et al. (2007): For bivariate analysis, only composite scores for domains are reported in this table and all multiple regression scores are reported.
(iv) Guerrero et al. (2015): ORC was expressed as a composite score in this paper and a shortened version of ORC tool was used.
(v) Guerrero et al. (2016): ORC domains were expressed as composite scores and a shortened version of ORC tool was used. This study focused on ethnic minorities and the authors concluded that better reported staff skills may not necessarily reflect their ability to help retain ethnic minorities in treatment.
(vi) Guerrero et al. (2014): Shortened version of ORC tool was used in this paper.
(vii) Lehman et al. (2002)
(viii) Simpson et al. (2009): Two analyses were completed in this paper. Second analysis only is included in this table. Composite scores for domains are also included.

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program characteristics as measured by ORC, determined drug or alcohol use amongst clients more than the therapeutic alliance, and that variability in the alliance was related more strongly to program variables than to individual counsellors. Unsurprisingly, Crits-Christoph et al. (2011) concludes that counsellors with high-stress levels, who work in poorly functioning programs with difficult to treat clients, have a poorer alliance and outcomes than counsellors working at more effectively functioning programs.

Programs where staff perceived there to be higher program needs and poor staffing levels had higher levels of drug and alcohol use amongst their clients (Crits-Christoph et al., 2011). Clients who accessed programs in which teams were viewed as having better cohesion and where staff viewed themselves as having more influence amongst their peers used less drugs and alcohol (Crits-Christoph et al., 2011). By including measures of drug and alcohol use, this study enhances findings in other papers discussed here and builds further on the predictive utility of ORC measurements found in other studies (Broome et al., 2007; Greener et al., 2007; Lehman et al., 2002; Simpson et al., 2009). Programs with a more favorable climate, better resources and fewer needs, where staff see themselves as having more favorable attributes, create environments where staff are more likely to be successful in forming effective relationships with clients.

Treatment satisfaction

The organizational climate domain was a significant predictor of treatment satisfaction although this was only reported in two studies (Greener et al., 2007; Lehman et al., 2002). Clients reported higher satisfaction with programs where staff reported greater autonomy, better communication, more

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openness to change and lower levels of stress amongst staff. Institutional resources were also important as clients also expressed higher satisfaction with programs where staff reported higher staffing levels, better equipment, office facilities and internet access. Remarkably, in both of these studies, staff influence was again important in that it predicted higher ratings of program satisfaction. Greener et al. (2007) identified a relationship between higher program needs and poorer satisfaction in the motivation for change domain. Clients are more likely to be satisfied with the treatment they receive in programs with a more favorable working climate, better resources and lower organizational needs, and where staff see themselves as having more influence with peers.

Treatment participation

In three studies, treatment participation was related to no more than three of the 18 ORC subscales. Organizational climate was again found to be important, as clients who accessed programs reporting higher staff cohesion, better mission clarity reported higher levels of participation in their recovery programs (Greener et al., 2007; Lehman et al., 2002; Simpson et al., 2009). Consistent with findings on counsellor rapport, influence in the staff attributes domain was also an important factor in determining how well clients participated in treatment (Greener et al., 2007; Lehman et al., 2002). Simpson et al. (2009) found improved participation where staff reported better opportunities for growth, higher personal efficacy and better adaptability. Simpson et al. (2009) was the only paper which found that clients participated more effectively in programs where institutional resources such as offices and equipment were better and perhaps this is more reflective of the UK context. Participation in treatment is poorer where program needs were identified as being greater (Greener et al., 2007). In programs where staff perceive themselves to have more positive working climates, better personal skills and lower program needs, clients are more likely to be more committed to their treatment.

Peer support

Peer support, which examines the extent to which individuals have accessed support from other program users, was the least reported on sub-scale where the CEST tool was used. One paper reported on the relationship between ORC and peer support, and identified in the staff attributes domain that staff having greater influence was important in determining if clients had greater peer support (Lehman et al., 2002). It is not clear to what extent program characteristics can influence the level of peer support clients utilize, or how client characteristics may influence on this.

Waiting time and treatment retention

Two US studies examined the relationship between program capacity, treatment waiting time and treatment retention (Guerrero et al., 2015, 2016). Program capacity incorporated three measures: leadership capacity, ORC and a programs agreement to accept government subsidized payments from lower income groups. A shortened version of the ORC tool (67 items instead of 118) was used for these studies and composite scores for ORC domains only were provided by Guerrero et al. (2016) while the second paper expressed ORC as a total composite score (Guerrero et al., 2015). When ORC was expressed as a composite score it was positively associated with both lower wait time and better treatment retention (Guerrero et al., 2015). In a separate study, the motivation for change domain (program needs) were positively associated with treatment retention and where staff reported better attributes, this was negatively associated with treatment retention (Guerrero et al., 2016). Unexpectedly, Guerrero et al. (2016) found that staff attributes were negatively associated with treatment duration; however, this study focused on in-treatment ethnic minorities only and the author argues the ORC tool was not designed to measure cultural competency. In all of these studies, program measurements were provided by one manager per program only. The negative relationship between staff perceiving themselves to have more favorable attributes and shorter treatment is anomalous and was partially attributed to possible deficits in staff skills in terms of engaging the high levels of ethnic minorities which attended the programs examined.

Coordination with other services

One paper reported ORC domains as a composite score and found that the ORC domains of motivational readiness for change and organizational climate were positively associated with coordination with mental health and public health services while the institutional resources domain was positively associated percentage of clients receiving HIV testing (Guerrero et al., 2014). This study also found that programs with more favorable ORC reduce waiting times through more effective coordination with mental health and HIV testing services.

Other findings

Smaller programs, having a less differentiated service approach and having standard accreditation were important factors determining better engagement (Broome et al., 2007; Lehman et al., 2002). Positive ratings where the service approach was not as variable are not expected and were attributed to the characteristics of clients accessing these particular programs (Broome et al., 2007). Staff having a smaller caseload and feeling a greater sense of professional community were also strongly related to client engagement (Broome et al., 2007). Clients who access smaller services where their keyworkers have a greater sense of professional community are also more likely to receive more effective care (Broome et al., 2007). Programs reporting more stability and budgetary certainty were also more likely to have favorable ORC and function more effectively (Lehman et al., 2002). In countries where healthcare is not free at the point of entry, willingness to accept state sponsored payment is critical in terms of engaging clients from hard to reach populations (Guerrero et al., 2015, 2016). Program type, capacity, and referral source of clients can also have an influence on a services ability to reduce waiting lists, retain clients in treatment, and work effectively with supporting services and many of these findings are worthy of further attention (Guerrero et al., 2014, 2015, 2016). Client characteristics are important, and being

older, female, spending longer time in treatment was also predictive of better engagement (Broome et al., 2007). Assessments of clients treatment motivation, psychological, and social wellbeing revealed that more motivated clients with better mental health, and greater levels of social functioning participate more in treatment and achieve more effective therapeutic relationships (Simpson et al., 2009). These findings should provide planners with important points for consideration.

Discussion

This paper has incorporated the previous 15 years of scientific research in relation to ORC and its relationship with client outcomes in the substance misuse field. The ORC tool or a modified version of this tool developed by Lehman and colleagues (2002) was used in all of these studies. This is not the only tool that has been used to measure ORC, Gagnon et al. (2014) identify in a systematic review that it has reliable properties when it is used to measure the process of knowledge transfer, but its ability to relate to client outcome measures when compared to other ORC measurement tools is not as well established. Following its initial design, this tool was described by Lehman and colleagues (2002, p. 208) as "a work in progress" but it has received little modification since. Theoretically, there is still some ambiguity regarding ORC (Stevens, 2013) and typically ORC is conceptualized in respect of a specific change (Armenakis & Bedeian, 1999; Weiner, 2009). The ORC tool developed by Lehman and colleagues was initially conceptualized to measure an organizations ability to adopt new innovations. However, it is promising that in the studies included in this paper, ORC was utilized successfully in conjunction with other measures to effectively assess organizational functioning. Overall, this paper supports findings identified in other studies, that attributes related to organizational effectiveness should be carefully considered by planners and policy makers, as they have a direct effect on client outcomes, and other important areas of treatment delivery (Ghose, 2008; Gossop et al., 2003; Kelly, Hegarty, Barry, Dyer, & Horgan, 2017).

The organizational climate domain was clearly the most important in terms of predicting engagement with treatment. This finding is supported by a previous systematic review on the relationship between ORC and innovation adoption (Kelly et al., 2017). This finding is consistent with studies in the for-profit sector which have demonstrated that a good organizational climate, which also increases employee involvement significantly, contributes to organizational effectiveness (Riordan, Vandenberg, & Richardson, 2005). The institutional resources domain was the second most significant domain in terms of predicting client engagement. In one study however, while institutional resources were found to be correlated with client engagement, it was not found to be predictive of this in a final statistical analysis (Greener et al., 2007).

It is important to highlight that studies using the ORC tool have established that there is a relationship between organizational climate and resources. Greener et al. (2007) showed that more favorable staff perceptions of institutional resources were directly related to their interpretations of organizational climate which also predicted better client engagement. The relationship between staff perceptions of resources needs and organizational climate was also demonstrated in a study by Joe, Broome, Simpson, and Rowan-Szal (2007) which was outside the scope of this review. This suggests that more highly resourced programs are more likely to a have a more favorable organizational climate, which in turn means that clients are engaged more effectively. It is possible that in practice that some aspects of organizational climate, such as improved communication and mission clarity might be improved without additional resources (Kelly, 2000). There is minimal evidence available on how this might be achieved in practice, and the relationship between climate and resources is worthy of further investigation.

Within substance misuse programs, where resources are often limited, the development of cost-effective interventions to improve organizational performance is warranted. An example of this is "The Change Book" developed in the US as a free self-help manual for organizations who wish to embark on organizational change (Addiction Technology Transfer Centers, 2004). Arguably, organizations with less resources and a poorer climate, may be less favorably positioned to engage with efforts to improve organizational effectiveness. There is no evidence available to support the utility of low-cost interventions in improving organizational climate, or other areas of organizational functioning. In studies outside the scope of this review, where staff have identified high program needs they are more likely to wish to engage in quality improvement initiatives (Courtney, Joe, Rowan-Szal, & Simpson, 2007).

Staff perceptions of their own attributes also predicted client engagement in all four studies. In particular, staff feeling that they had greater influence with peers was a predictor of client engagement in two of the studies (Greener et al., 2007; Lehman et al., 2002). In healthcare settings, more influential staff may possess inter-personal skills which make them more effective at engaging clients, but certainly have attributes which enable them to more effectively contribute to and sustain organizational improvements (Borbas, Morris, Mclaughlin, Asinger, & Gobel, 2000; Flodgren et al., 2011). Substance misuse treatment programs where staff see themselves as having more influence amongst peers are more effective at implementing new innovations in practice (Fuller et al., 2007; Lundgren et al., 2011; Lundgren, Chassler, Amodeo, D'ippolito, & Sullivan, 2012). A systematic review by Kelly et al. (2017) on ORC and innovation adoption, identified several papers where a relationship between staff influence and innovation adoption was established. In this review, these findings were not reflected in the UK study but the findings on the importance of staff influence is worthy of further investigation.

High scores in the motivation for change domain signify that staff have identified greater program needs and thus while this may signify a greater desire for staff to change (Courtney et al., 2007; Joe et al., 2007), other studies have shown that it is also likely to indicate unfavorable organizational performance (Lundgren et al., 2012). This finding is consistent with a study included in this review where it was found that there were greater perceived program needs, treatment engagement was less favorable (Greener

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et al., 2007). In this respect, papers included in this review contained some results which deserve further attention. Positive relationships between the motivation for change domain (program needs) and outcomes for clients were identified in two papers (Guerrero et al., 2014, 2016). This indicates that where organizations were perceived as having more deficits by staff they performed more effectively, which conflicts with findings from other papers. It is notable that in these two papers, the ORC questionnaire was reduced from 118 to 67 items and as the domains were reported as a composite score, it is not possible to ascertain which subscales were excluded. Utilizing composite measures is convenient, but including subscale scores provides richer data, allows researchers and planners to understand important organizational attributes and facilitates cross comparison of results.

Comparisons between US and UK measures of ORC and client engagement demonstrated similar but not the same results and this makes a case for more cross-country comparisons to support consistency in the findings (Simpson et al., 2009). The different results not only between countries, but also between services in the same country, illustrate that the utility of the ORC tool may be influenced by the type of treatment services that it is used in and further clarity is required in this respect. In terms of ORC findings, where staff identify higher program needs, client engagement is likely to be lower. More effectively resourced programs are more likely to have a favorable organizational climate, which in turn is a decisive factor in determining client engagement. Organizations where more staff believe that they have better skills, greater influence with their peers and have a sense of belonging to a professional community are also more likely to deliver better outcomes for clients.

Limitations

Although rigor was attempted during this review, it is important to highlight potential limitations. It is possible that important papers were missed, although the authors were vigilant throughout the process. This review was limited to specific types of substance misuse programs. Including research from other fields may have helped to broaden the understanding of this concept in relation to client or customer engagement and might have provided further validation of the findings. Modified versions of the ORC tool developed by Lehman et al. (2002) have been validated for a range of settings, including correctional facilities and youth programs (Lehman et al., 2012; Saldana, Chapman, Henggeler, & Rowland, 2007). The variables measured by ORC are dynamic, subject to change, and would be measured most effectively over time as the external and internal determinants evolve (Rafferty, Jimmieson, & Armenakis, 2013; Stevens, 2013). The eight studies included in this review were cross-sectional, which did not allow for the analysis of ORC longitudinally. All treatment-related benefit or outcomes that related to ORC were included in the scope of this review. Many of the outcomes measured, such as treatment satisfaction and retention, may be considered to be proxy measures of treatment success. Outcomes such as inter-agency cooperation were self-reported by staff, and the benefits for clients remain unclear. A more specific focus on outcomes may have provided less ambiguous findings, but may also have excluded potentially important results. Findings from studies conducted outside of the US are broadly consistent with those conducted in the USA (Bowles, Louw, & Myers, 2011; Rampazzo, De Angeli, Serpelloni, Simpson, & Flynn, 2006). There were still contrasting results, not just from country to country, but differences were also reported between programs. In this respect, more research is required to determine how effectively ORC can be generalized to other contexts. Analysis of this is restricted where papers included in this review, provided composite scores for each domain of ORC. While the findings in this review support the utility of the ORC concept and its measurement, it should be acknowledged that there are variables which are not within the scope of this review which can determine the success of treatment (Darker et al., 2016; Gossop et al., 2003). It is not yet clear how closely these relate to variables which are incorporated into ORC measurements.

Conclusion

Overall, too little is known about the relationship between treatment service variables and client outcomes. Staff perceptions of treatment services are important and can contribute valuable information on how capable a service is of providing effective treatment. Program functioning as measured by ORC provides a measurement of several areas of organizational functioning which can be predictive of important client outcomes. Clients who access services with a good organizational climate are more likely to be satisfied with treatment, will have better relationships with staff, and will engage in substance misuse less frequently. An effectively resourced and financially stable program with lower needs is more likely to have a positive organizational climate. The relationship between specific types of resources and organizational climate is not yet clear. Clients will also engage more effectively with staff who have particular attributes, but more knowledge is required on how to effectively identify and develop these attributes in practice. An understanding of which aspects of treatment services are the most important is enhanced when ORC is measured in conjunction with other variables such as caseload size, clinical governance, financial stability, and service user complexity. In practice, little is known about how to address organizational deficits once they are identified using the ORC tool, and further analysis of this is required. There is currently no accepted standard or understanding of the configuration of effective substance misuse treatment services. Obtaining further evidence on how organizational variables identified in this review can determine treatment effectiveness would provide valuable data for policy makers and planners. ORC measurements provide a good basis on which this can be developed. Despite some conceptual discussion around ORC, it is widely accepted that ORC is a dynamic concept and more longitudinal assessment of how changes in treatment services impact directly on client outcomes. This would provide an indication of the impact of new practice, policies, and variabilities in resource allocation over time. There is also a requirement for in-depth qualitative exploration of how ORC and other variables inclusive of client perspectives might influence effective treatment. Utilization of ORC measurements can provide a basis for an expansion of knowledge on *how* and *why* treatment works. Overall, policy makers and planners ought to consider how changes for which they are responsible, will impact on organizational functioning prior to the implementation of change.

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Disclosure of potential conflicts of interest

No authors associated with this paper have any financial and personal relationships with other people or organizations that could inappropriately influence (bias) this paper.

ORCID

Peter Kelly http://orcid.org/0000-0002-0505-8266

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Appendix 1

S1:

Terms associated with readiness, functioning and change

(TI(Capability OR preparedness OR acceptance OR willingness OR capacity OR commitment OR participat* OR chang* OR innovat* OR transform* OR efficienc* OR implement* OR disseminat* OR function* OR effectiv* OR climate OR engagement) OR AB(Capability OR preparedness OR acceptance OR willingness OR capacity OR commitment OR participat* OR chang* OR innovat* OR transform* OR efficienc* OR implement* OR disseminat* OR function* OR effectiv* OR climate OR engagement) AND (TX (Readiness)

AND
S2:

Terms associated with organizations, teams, and individuals

(TI(Organiz* OR organis* OR institution* OR team OR individual OR program* OR work* OR service OR system) OR AB(Organiz* OR

organis* OR institution* OR team OR individual OR program* OR work* OR service OR system)

AND

S3:

Terms associated with substance misuse and associated treatment

(TI(cocaine OR crack OR opi* OR heroin OR amphetamine* OR methamphetamine* OR MDMA OR ecstasy OR methylenedioxy-methamphetamine OR cannabis OR marijuana OR psychedelic OR mushroom OR glue OR inhalant OR poly* OR substance* OR drug misuse OR drug abuse OR addict* OR dependen* OR drug treatment* OR drug counsel* OR treatment program* OR drug user*) OR AB (cocaine OR crack OR opi* OR heroin OR amphetamine*OR methamphetamine* OR MDMA OR ecstasy OR methylenedioxy-methamphetamine OR cannabis OR marijuana OR psychedelic OR mushroom OR glue OR inhalant OR poly* OR substance* OR drug misuse OR drug abuse OR addict* OR dependen* OR drug treatment* OR drug counsel* OR treatment program* OR drug user*)

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Appendix 5 Qualitative paper;'They don't actually join the dots': An exploration of organizational change in Irish opiate community treatment services

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'They don't actually join the dots': An exploration of organizational change in Irish opiate community treatment services

Kelly Peter [a,*], J. Hegarty [a], Dyer Kyle R. [b], A. O Donovan [a]

[a] College of Medicine and Health, School of Nursing and Midwifery, University College Cork, T12 AK54, Ireland
[b] Institute of Psychiatry, Psychology and Neuroscience, King's College London, 4 Windsor Walk, Denmark Hill, London SE58BB, United Kingdom

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ABSTRACT

Background: People who use community-based drug treatment services spend a considerable amount of their time in treatment in direct contact with frontline staff. These staff are also fundamental to supporting the implementation of change to meet service user needs. Yet, very little is known about staff perspectives on the process and internal dynamics of drug treatment services, their views about what makes services work effectively, and how services can more effectively adopt to changes in practice.

Aim and method: Conducted across Irish community opiate prescribing services and drawing on data from 12 in-depth qualitative interviews with frontline staff. This paper examines the narratives of staff about the factors which influence the dynamics and process of treatment services, particularly in relation to the implantation of change.

Findings: Change *itself* was described both in respect of how a service responded to immediate service user needs *or* supported planned change. Little distinction was made in respect of service attributes which facilitated a response in either context. Overwhelmingly, staff contextualised current service effectiveness, historical change, and desired change in how effectively their services met service user needs, which was also viewed as a significant motivation for change. Differences in operational standards across services in terms of practices, policy implementation, job roles, divisions between professional groups, and recruitment and retention of staff inhibited change adoption. Factors which were identified in terms of inhibiting or facilitating planned change were consistent with the wider literature on change implementation but provided unique insights in the context of substance misuse services.

Conclusions: A range of interdependent factors which influence an 'eco-system' of service delivery were identified. Effective policy implementation in Ireland remains aspirational, but findings reported in this paper have important implications for future planning and design of services for people who use drugs, and provide a good basis for further investigation.

1. Introduction

If treatment services for people who use drugs are to maintain or improve how they meet the dynamic needs of people who are dependent on opiates, they must rapidly adopt to immediate needs, new approaches and technologies, as well as develop a proficiency in working with a multitude of different agencies (Kelly et al., 2017). From an organizational perspective, we know that some treatment services are better than others at providing treatment, where more effective services yield better outcomes for service users such as increased levels of psycho-social functioning, and reductions in drug use (Greener et al., 2007). While it is known *that* treatment for people who use drugs works, very little is known about the process and dynamics of treatment services which explain *how* and *why* they work, or effectively adopt to the changing needs of people who use drugs.

It is likely that the effectiveness of treatment relates to a multitude of factors, which are both internal and external to a treatment service. For example, factors which are internal to a service such as staff turnover, burnout, resources, climate, culture and leadership are likely to have an impact on the internal service dynamics and treatment effectiveness (Landrum et al., 2012; Skinner & Roche, 2021). External factors such as the development and implementation of policy, or its ideological

* Corresponding author.
E-mail address: peter.kelly@ucc.ie (K. Peter).

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underpinnings are other factors which are thought to be particularly pertinent in term of their impact on the effectiveness of treatment of drug dependence (Duke & Thom, 2014; Mayock & Butler, 2021a, 2021b). The nature or extent of these relationships and how they impact on treatment remains unclear.

There is no one 'over-arching' theory which can simultaneously describe how organizations and change within those organizations works. There are however a range of seminal theories and concepts which can help our understanding of how organizations work and are relevant for underpinning practice-based change and research design. For example, systems theories describe organizations as a collection of individual components where examination of a singular phenomenon fails to encapsulate whole interdependent systems and sub-systems (Orton & Weick, 1990; Von Bertalanffy, 2013). This suggests that we should consider events in organizations as having multiple causation and that change can only occur by changing a system and not just its individual parts. Consideration of the *drivers of change* (e.g. economic, technological) and *types of change* (e.g. planned, unplanned, big or small) are also thought to be important in terms of understanding *how* organizations and change work (Crowther & Green, 2004; Porras & Robertson, 1992). Within seminal organizational change theories and where measurements of change have been operationalised in practice, change is interpreted as a multi-stage, non-linear process and not just a 'once-off' event (Lewin, 1958; Louie et al., 2021). From these theories, we can deduce with some certainty, that organizations are complex 'eco-systems' where the specific characteristics of organizations are influenced by a plethora of overlapping and interdependent factors.

While a number of conceptual approaches related to organizational structure and organizational change were considered relevant, the concept of *organisational readiness to change* (ORC) was considered to provide an appropriate conceptual guide for this study. ORC, a multi-level construct, is a key concept with the field of organizational development and is described as a shared psychological construct of how *willing* and *able* staff are to support organizational change (Weiner, 2009). Theoretically at least, ORC is influenced by a plethora of determinants such as the nature of a specific change, and a range of contextual and informational factors which are internal and external to an organization (Holt & Vardaman, 2013; Weiner, 2009). In practice however, two systematic reviews on ORC which included over 20 studies, mainly conducted in U.S. addiction treatment services, determined that where ORC has been operationalised or measured it has most typically not incorporated a specific change, but has been used more as a measure of overall organizational functioning (Kelly et al., 2017; Kelly et al., 2018). Studies included in these reviews have identified that staff perceptions of; specific types of organizational resources such as staffing, aspects of organizational climate such as communication and openness to change and staff attributes such as having influence with peers and more job autonomy, can make services more effective at both innovation adoption and engaging service users (Lehman et al., 2012; Simpson & Dansereau, 2007). While relationships between ORC, change adoption and client engagement were established in many of these studies, the mechanisms which underpinned these relationships remained unexplored, and there is a dearth of prospective, interventional studies, or qualitative exploration which facilitated retrospective analysis (Kelly et al., 2017).

Overall, the evidence on how substance misuse services work is characterised by a deficit in knowledge of what organizational and workforce attributes make a service more effective adopting to change and at delivering treatment (Louie et al., 2021; Van de Ven et al., 2020). The complexity involved in identifying factors which influence a services ability to adopt to change or its treatment effectiveness may be one reason why this question has not received appropriate levels of attention. The availability of resources, incentives for researchers, and methodological challenges are also likely to play a part (Bauer et al., 2015; Kelly et al., 2018). In the absence of large scale and resource rich studies, qualitative inquiry is an appropriate approach as it will allow for retrospective inquiry and can provide insights into how social and cultural and organizational phenomena impact on respondents and their perceptions of service functioning (Flick, 2018; Foss & Ellefsen, 2002).

2. Method

This qualitative research focused on exploring staff perspectives of organizational functioning and change in community opiate prescribing services in Ireland. Specifically, this research was focused on what factors might influence a services effectiveness at adopting to change. A qualitative descriptive approach was used as this is thought to be particularly useful for research in healthcare through the provision of rich, straightforward and factual explanations for different perspectives on the same phenomena (Colorafi & Evans, 2016; Neergaard et al., 2009). Ethical approval was granted for this study from two regional ethics committees in Ireland. For this study, services were considered separate when they operated from different buildings only.

2.1. Recruitment

Participants were recruited from a convenience sample of 12 [seven urban and four rural] publicly funded community opiate substitute prescribing clinics in Ireland using a purposive sampling approach (Etikan et al., 2016). Services were identified through a combination of internet searching, consultation with regional managers of addiction services and through a wide range of consultations with members of bodies representing professionals such as psychiatrists and nurses. Permission to access services was obtained directly from service managers, all staff teams were emailed with details of the study and in most cases the researcher met with the multi-disciplinary teams in person, answer any questions about the study, and to identify suitable participants. Although there is no national registry of addiction services or prescribing services in Ireland, it is estimated that the clinic sample represents approximately 40% of all such clinics nationally. All 12 clinics that were approached, agreed to participate in the study on the basis that their anonymity would be assured.

To be eligible for participation, staff had to be over 18, have direct contact with service users and have worked or volunteered in individual OST services for more than 14 h a week for a period no less than one month. Within these confines, effort was made to recruit participants from a range of professional backgrounds, subject to their availability in busy clinical environments. Data adequacy was considered by the research team in terms of the study design, composition and number included in the sample, but also the depth or *richness* of the data required from each participant (Vasileiou et al., 2018). Based on this, *thematic saturation* was considered as an appropriate means to justify sample size (Fusch & Ness, 2015). Thematic saturation was considered to have been reached after 10 participants and considering the study design, study objectives and phenomena under investigation, the decision to include 12 participants was deemed to be appropriate (Alder & Alder, 2012; Baker et al., 2012). The 12 staff represented three quarters of staff approached to participate throughout the course of this study.

2.2. Interview procedure and data collection

A number of different interview approaches were considered for this study (Mitchell, 2015). The semi-structured interview design was considered most appropriate and its design and implementation followed a five-step process described by Kallio et al. (2016). (i) Pre-requisites for using semi-structured interviews were considered; a semi-structured interview guide was used as this was considered appropriate for participants to openly explore their experiences and provide a lucid description of the constructs under discussion (Mitchell, 2015; Sandelowski, 2000; Watson et al., 2008). (ii) Previous knowledge was assessed examining important concepts, and findings from two systematic reviews on organizational readiness to change in addiction

treatment services were considered (Kelly et al., 2017; Kelly et al., 2018; Weiner, 2009) and (iii) a preliminary interview guide was formulated on this basis. (iv) A pilot study was conducted (n = 2) before (v) the semi-structured interview schedule was deemed appropriate. When recruiting, staff were approached individually, and subsequently interviewed in a quiet room in their places of work. Following the provision of an information leaflet, an opportunity was given for participants to ask questions about the study before the administration of consent form which was signed by all participants. To develop a sample overview, demographic data, which was pseudo-anonymised, was collected.

In order to encourage participant comfort, all interviews commenced with a question about the persons career to that point. Subsequently, several areas relating to organizational functioning were targeted in the discussion relating to what works well in the organization, how the service helps service users, how effectively the service adopted to change, what facilitated this change (or not), what could be improved and how (Appendix 1). While the interview focused on specific topics, a flexible approach was used by the interviewer in order to allow participants to identify salient topics and talk openly (Silverman, 2013). This helped to maintain focus on the important experiences of working in services. Interviews lasted between 1 h and 1 h 25 min. Data was collected between July 2019 and March 2020.

2.3. Data management and analysis

Trustworthiness was carefully considered throughout this study including at the design stage (Elo et al., 2014; Thomas & Magilvy, 2011). Interviews were transcribed verbatim, but with all personal identifiers removed and the text was cross checked for accuracy. Analysis was guided using a content analysis approach as this is considered the most appropriate type of analysis where a qualitative descriptive approach is used, and it is also considered a most suitable approach for organizational research (Duriau et al., 2007; Sandelowski, 2000). Considering the study objectives and the need to provide *rich* information, using a *latent* approach to data analysis was considered acceptable and appropriate (Bengtsson, 2016; Graneheim et al., 2017). Analysis was guided specifically using a step by step process for content analysis described by Erlingsson and Brysiewicz (2017). Firstly, the content of the interviews was analysed by the researcher (PK) reading and re-reading the data in order familiarise with the text and identify emerging categories and themes. Meaning units were developed and then through an iterative process involving cross-checking and discussion with the research team (PK, AH, JH). These three researchers initially reviewed six transcripts and met at various intervals to reconcile a list of codes that captured all of the relevant data. Subsequent interviews were then coded by one researcher (PK) and new codes were developed if or when required. These codes, were then condensed into sub-categories, categories and finally themes using an inductive process where the team met at regular intervals to develop consensus and ensure consistency across all of the interviews (Erlingsson & Brysiewicz, 2017; Yates & Leggett, 2016). All members of the research team (PK, AH, JH, KD) had previously attended training courses in qualitative research which incorporated techniques on how to best account for their subjectivity. A reflexive approach was taken throughout the process through the use of a reflective diary by the primary researcher (PK). This approach was not undertaken from a firm philosophical standpoint, but in order to account for the primary researchers position or impact on the research process (Dowling, 2006; Jootun et al., 2009). The reflexive diary took account of reflections on each service visited, the interview process, the dynamic between interviewers and interviewees and laterally to take account of sources of bias in the interpretation of data. Reflections were discussed with the research team during all group meetings (Dowling, 2006).

3. Results

3.1. Participant and service characteristics

The study cohort was interviewed across 10 different geographic locations in southern Ireland at their places of work. Four of the interview participants worked across several services under the same management structures. All participants worked in prescribing services with multi-disciplinary teams comprising mainly of both permanent and sessional prescribers, nurses, counsellors, psychologists, social workers, drug workers and general assistants. Sessional prescribers were typically non-addiction specialist General Practitioners (GP'S) working in their own practices, who attended OST- services for once or twice a week 'clinics' to prescribe opiate substitution therapy and briefly review service users. Interviewees came from a medical or nursing background (n = 4), a counselling or psychology background (n = 5) or worked as drug workers/general assistants (n = 3). The seven women and five men were predominantly white Irish, had a mean age of 49, had been in their posts for longer than five years and were educated to either degree (n = 9), masters (n = 3) or PhD (n = 1) level.

3.2. Findings

During interviews, all participants discussed their services ability to adopt to change in two related contexts; responding to more immediate service user needs, and implementing specific innovations across the service, such as new therapies, physical health interventions or changing the physical environment. Generally, participants referred to a service in terms of being in one building, but participants who worked in more than one area, or across buildings, typically discussed the service in that context. Three inter-related themes arose from the data (Table 1). The themes were articulated as three distinct needs i.e., need to (i) Meet people where they are at (ii) join up the dots (iii) get buy in (for change initiatives).

3.2.1. 'Meeting people where they are at'

Staff identified that service users in OST treatment have a plethora of complex needs which might be described as existing on a 'spectrum of need'. Drivers of significant changes to the services over time, how current levels of service effectiveness were measured, and aspirations or motives for future changes were all described in the context of needing to 'meet people where they are at' at all points on this 'spectrum'. In this regard, it was universally expressed that both staff and services were on a journey which was not yet complete.

3.2.1.1. How the service meets service user needs. All interviewees focused strongly on the relational aspect of care. Being warm, empathetic and non-judgemental were seeing as being important personal traits for staff. Interviewees, held largely positive views of their services in respect of using limited resources well, meeting service user needs and relationships between staff and with service users. There was a widely

Table 1
Summary of findings from qualitative interviews; themes and sub-themes.

Theme 1: 'Meeting people where they are at'
How the service meets service user needs; meeting needs as a driver of organizational change; where we have come from-'shifting the balance' and meeting service user's where they're at; how the service needs to change to meet service user needs.
Theme 2: 'We need to Join up the dots'
Inconsistencies in how individual staff and staff groups operate; operational differences within and between services; how recruitment and retention impact on change adoption/service delivery.
Theme 3: Getting 'buy-in'
Organizational attributes and attributes of change which support or inhibit change implementation; ensuring stakeholder buy in, ensuring measurement or 'follow through', risk aversion and lack of resources impeding change.

held view that services were overly focused on the prescribing of OST and testing of urine samples, to the detriment of psycho-social and other aspects of care:

> *"It's very medicalised, I feel. Very medicalised. And so the whole culture of that is about my prescription and you know, and the other elements, which we do try to, I suppose, encourage people to partake in, you know, whether it's counselling or whether it's group work or even just looking at training. All of that kind of takes a back seat in a way to that really important event."*

Most staff supported the idea that their services were good at adopting to change and that staff were willing to 'go the extra mile' for service users. In order for service users to access holistic care, having diversity in skill mix, good relationships between staff and having staff with greater levels of experience was considered to be important:

> *"I do think it's very patient or client-centred and accessible in my opinion … we have good relationships as a team…with the range of professionals who are working in the clinic. There's a good, rounded service provided, in my opinion"*

> *"I suppose we'd meet, we meet, I won't say everybody does, but I think a lot of people meet clients' needs. We meet the client where they are themselves"*

Improved collaboration with outside agencies was considered to be highly important by staff in terms of meeting service user needs. All participants reported some progress in this, but this was inconsistent across services. Specific examples of integrated working included; developing a shared treatment model with mental health services for working with dual diagnosis, to developing a multi-service confidentiality/consent form:

> *"So that's a really good piece as well because not only are we getting to do a significantly important I suppose joint piece of work around this person, we're also getting to know so many more people out in the, be it the homeless service, be it the accommodation, you know, all the different services, the detox units, you know, the recovery units, that they're all coming in and that I suppose we're open for business."*

3.2.1.2. Meeting service user needs as a driver of organisational change. Participants felts that volume and complexity of cases had increased over time and staff said that they were also expected to 'do more' to address this. The success or failure of services to adopt to change was discussed by all staff in terms of how successfully services improved how they met service user needs or not. Having good communication and relationships with services users in this respect was seen as imperative in order to change service responses to meet their needs. Understanding and needing to respond to a wide range of service user needs, was seen as a significant motivation for changing practice and services. These changes related to areas such as or supporting service users in their difficulties when interacting with a range of other services, for example legal, housing, or other treatment services or responding to emerging drug trends:

> *"we do change [practice], I think, when they come in and tell us. Yes. I think they're open as well at telling us about new drugs and that, do you know."*

> *"Yes, we are all adults and we are not doing it for our own ego's or anything like that, we are doing it for the service, and we are doing it for the people we work for* [service users]."

3.2.1.3. Where we have come from; 'shifting the balance' and 'meeting service user's where they're at'. Participants described a transition in the ethos of services over the previous decade or more, from that of an abstinence based and ideologically driven approach, to what was described as more person-centred 'compassionate pragmatism'. This involved a shifting emphasis towards the use of scientific evidence and a more harm reduction approach. Services in the past were described as being less accessible and more limited in terms of what they offered service users, specifically in terms of the range of psycho-social supports available, and in respect of flexibility around substitute prescribing regimes. Much of this 'status-quo' was attributed to staff factors such as; training limitations, groups of staff working in 'silos', and the ideological disposition of staff:

> *"I suppose the thing that I've noticed the most is when I first came to work here, there was more emphasis on the disease model and we've moved away from that and we'd be much more pragmatic in our approaches and I would say that most of the teams have embraced the harm reduction model"*

Staff also described their own sense of dissatisfaction with this 'old' ideology and its limitations in meeting service user needs, as one of many motivating factors for wanting to change it. Services in the past were described as being 'punitive', with one participant using the metaphor of the service constantly 'wrestling' with service users. It was identified that this was still a work in progress as not all staff and practices fitted with this 'new way of working' and that the system still makes people feel 'controlled'. Almost all staff were disparaging towards the 'old way' of doing things:

> *"The treatment of addiction has been blighted by people dogmatically following an ideologically based approach rather than a pragmatic empathic compassionate based approach."*

No specific event or decision was identified in terms of driving this change in ideology. Leadership and a greater divergence in staff skillsets were thought to be a positive contributory factor. Some participants identified the drivers behind this change as being part of a wider societal trend or 'cultural' shift where drug users were being viewed with increasing compassion which influenced national drug policy and was reflected in 'conversations' that began happening in the clinics:

> *"I think there's also been like a greater focus on the organisation shying away from kind of an authoritarian sort of approach to kind of treatment and how the place is run to more of a client-focused… And I can't kind of say specifics, but there would be a kind of focus on the person rather than the kind of rules of the organisation. Yes, yes, yes."*

Participants described specific changes across services which exemplified this 'shift' in service ethos. Some of these were described as being 'traumatic' to the point that some staff left their posts. These changes included; building purpose-built clinics, changes to the lay-out of existing clinics, changes to practice, significant collaborations with other agencies or in some cases changing entire service models, described by one participant as:

> *"Moving from a sense of the professionals care plan to a rehabilitatory philosophy of 'it's the clients care plan, and we are the public servants who are supporting and empowering the clients care plan'."*

It was thought that 'shifting in the balance' benefitted service users by 'sending them a message that they are valued', delivering a more holistic service, and focusing less on drug use as a measure of treatment success. Within teams, it was generally reported that there is now more focus on evidence-based practice, clearer service goals, and increased communication amongst teams through collaborative working.

3.2.1.4. How the service needs to change to meet service user needs. Aspirations for change related directly to meeting service user needs and related to either operational aspects of services or resources. Better psycho-social support for mental health issues and navigating through a range of services was expressed as a priority. Many staff suggested recruiting outreach staff or recruiting a lead addiction psychiatrist to accomplish this. It was also felt that cost-neutral changes to the operation of nurses and prescribers could increase engagement and reduce waiting times [4–6 months in some areas], but this was impeded by organizational structures:

> *"If we just did things better, more efficiently, you know, and utilised, you know, all of the staff that we have, we could save them a bit of money. So we should be. That should be a no-brainer for people…I think the hierarchical system that we're in makes it very, very difficult"*

Having better access to in-patient services such as detox, stabilisation and rehab was also considered to be a priority. Appropriate physical infrastructure was also considered to be important for safety, particularly in waiting areas, and would also indicate to service users that they are valued:

> *"We're thrown into an old unit and they're coming up to us and I think it'd be more suitable to the clients if we did have kind of a proper purpose-built unit. It would show them they're kind of valued…"*

3.2.2. 'We need to join up the dots'

Staff overwhelmingly expressed that there was a lack of 'standardisation' with treatment services and between services. This related to differences in practice of staff in the same or similar roles, differences between how staff groups within the same service operated when dealing with service users, or significant operational differences between OST services and external services, this included other OST services under the same management structures. It was felt for a range of reasons, that deficits in 'standardisation' resulted in difficulties retaining staff and obstructed successful implementation of change and/or the services ability to meet service user needs.

3.2.2.1. Inconsistencies in how individuals and staff groups operate. Multidisciplinary clinical meetings were seen as a place where staff could exchange ideas and challenge and improve practice. Not all services held clinical meetings with all disciplines present and there was a sense that this inhibited the ability to respond to needs:

> "[counsellors have their meetings] *and then doctors, nurses and the managers have their meetings. So I think everyone needs to kind of come under the same umbrella for it to work properly*"

Apart from two services, participants across disciplines observed that there were significant differences in prescribing practices within services, ranging from punitive to lenient. These differences related to how closely prescribers followed OST guidelines for taking urine samples, drug use, and take-away methadone. This had a detrimental impact on how consistently the service was delivered:

> *"It has a big impact on those [service users] because they receive totally two different services, and we see it!"*

Some of this was attributed to the use of sessional prescribers, and differences in how prescribers responded to risk, as well as ideological differences about addiction, such as subscription to abstinence-based approaches or morally-based standpoints. The use of full-time prescribers in services was described by one prescriber as an 'oddity'. These differences communicated a sense of inequity to service users, resulting in inter-personal conflict which support staff have to manage:

> *"Now, some* [prescribers] *are very good and will listen and, you know will kind of be aware of policy, will be aware of good practice and there may be others who don't and it's kind of 'This is the way we do it and that's it', which can be very difficult with service users."*

Some participants described an informal division in teams between clinical (nursing/medical) and therapy staff where these teams often had separate meetings. It was perceived that these groups set boundaries differently with service users. Clinical staff reported having less time to spend with service users and referred to themselves as being a little 'harsher' than therapeutic staff:

> *"And they're more therapeutic and we're more medical and we're more black-and-white and they'd be a little bit more flexible, I think, with stuff."*

Some participants observed that therapy staff received in-house and external supervision or 'lots of maintenance' while clinical staff rely on more informal support. A desire was expressed to have these professional structures in place for all workers as it was useful for reflection on the implementation of more 'nuanced' training and new practices, as well as emotional support:

> *"Supervision isn't done out in the [place omitted], but like it really, really works, I think, to help you work through problems when you're in this. You want to bounce things off and say, 'Did I do that right? Did I do it wrong? Or what do you think of that?'"*

> *"They [counsellors] would have outside supervision. They would have one-to-one supervision with seniors, whereas on the medical side of the house, we're like who's got the time for that? Ok? And then I suppose people are having conversations and it's like the grass is greener on the other side of the fence. So like ok, they're getting that. Why can we not do that?"*

Team cohesion was also thought to be adversely affected by differences in how staff adhered to their role boundaries and implemented team decisions. This impacted negatively on how the service met service user needs by sending them 'mixed-messages'. Conversely, staff working at frontline level spoke about being excluded from team meetings, having to step outside the boundaries of their roles to meet service user needs, and expressed frustration as they felt that their skills were not recognised:

> *"So most of the work, we're like key workers. We're on the ground. We're getting stuff done. We're giving them advice. We're telling them where to go. So we have so many skills, but not utilised."*

3.2.2.2. Operational differences within and between services. Differences were observed in how services within the same management and governance structures operated, particularly where staff worked across several services. The differences identified related to clinical leadership, skill mix of staff, the number of clinic opening days, level of prescribing cover, level or type of psycho-social support available to service users, approaches to risk management, and adherence to protocols. It was identified that these service structures presented barriers against implementing change and a strong desire was expressed for standardisation across services:

> *"We're supposed to be all working from the same protocols and the same policies and we're not, we do things very, very differently… so then that can cause different language, different discussions, how we see a client and work with a client differently"*

One participant attributed this to how services were structured from a 'macro' perspective, in terms of how policy was implemented and how

services were planned and developed:

> *"A lot of the services came into being because the need was recognised first and they put the service in without really thinking more broadly about the structures of those services…it is a bit of a battle from that point of view, trying to bring about change and to influence change- because of the way the services are structured"*

From an organizational perspective, factors that were identified as working against change were; rigid staff hierarchies, role entrenchment, not having clear clinical leadership structures, inconsistencies in implementing standard operating procedures or policies, and not addressing poor performance of staff. Many staff spoke about this as being reflected in an overall culture which extended more widely into the health service and government, where it was felt planning and accountability could be improved:

> *"To say, 'Yes, we did get it wrong' or… And at times, I suppose we see this right up to the political level, don't we? Where we're looking at a statement being made only the other day, 'We got it wrong, we're really sorry'. How long did it take that apology to come?"*

The importance of leadership was emphasised in terms of improving services' internal structures, the development and implementation of national policy, as well as streamlining processes between different community services. While staff generally reported that improvements had been made in respect of integrated work with other services, this was still considered to be a 'work in progress' that needed greater direction, planning and more connection with and recognition of events on the ground from policy makers and planners:

> *"I think that's somewhere where up along the line, they don't actually join the dots and then it leads to frustration down along the line where people are trying to join the dots, are trying to get people into services, moving along, getting the next stage…get them healthier or whatever and sometimes the dots aren't joined."*

As well as needing to improve the planning and integration of services more broadly, it was thought that increasing the standardisation of how services operated would address many of these issues and ensure more continuity of care. It was felt that this would reduce an over reliance on individual staff members, thus increasing equity and consistency of care for service users. It was also thought that improving governance would allow services to feel more comfortable in taking positive risks, both in adopting structural change and in responding to service user needs. Staff who worked in other areas spoke about their experiences of different governance structures and the impact that these structures had on ability to adopt to change and meet service user needs:

> *"I can see a difference because I came from working with* [name withheld] *and the governance structures were really clear. The leads were really clear and so it was a lot easier to look at change and to look at best practice, and to kind of work"*

Several staff felt that oversight and monitoring would be important for improving standardisation in terms of both individual and organizational performance. Staff identified several frameworks such which could be used to 'benchmark' service standards and suggested that these could be monitored by means of internal clinical audit or through external regulation, the latter is not currently a feature of addiction services in Ireland:

> *"There was supposed to be this QuADS, which was Quality for Alcohol and Drug Services, and they were going to be like, my understanding, An Bord Failte [Irish tourist board], where they come and you get three stars, four stars. You know, that sort of thing. I think we need HIQA [independent health inspector] to come in and say, 'Why don't you have a safety statement? That's against the law'"*

3.2.2.3. How recruitment and retention impact on change adoption and service delivery. Difficulties in recruiting and retaining staff were identified as something which adversely affected an organization's ability to sustain organizational change and respond to service user needs. It was identified that the principal reasons for staff leaving were related to lack of career progression and better opportunities to progress in other specialist areas. In smaller clinics, staff identified negative impact on service users when clinical staff were not available, such as non-attendance at clinics and increased waiting times for assessments. It was felt that a 'standardisation' of job roles career pathways and processes within clinics, as in other specialist areas of healthcare, would help to address this and support change implementation.

> *"Well, without that* [standardisation], *you see, you're going to have a throughput of staff and that's a problem. You know, that's a problem because I think you're not going to develop things unless you maintain your experienced staff. You'd be retraining everybody all the time, so I think that's across all services."*

Working within the addictions field was not seen as an attractive prospect for outside healthcare professionals. In general, staff identified that the work was 'emotionally challenging, exciting & wearing', with service users 'bringing in heavy stuff' and making slow progress in treatment. Several staff members reported dealing with the deaths of service users in the past year. This necessitated utilising informal supports from colleagues and giving attention to self-care outside of working hours. Many staff also suggested that increasing staff resources, and in some areas using existing resources more effectively would help to address this. Some staff felt that rewarding staff and having informal gatherings either inside or outside the working environment would benefit the team dynamic and help to alleviate the risk of burnout. Again, formal supervision was also identified as providing important emotional support and reducing burnout but was not available to all staff.

> *"A lot of the time, you wouldn't see faster recoveries and outcomes like and you can get burned out from that, do you know. But I think when you have supervision and someone to talk to, it kind of stops that burn-out, do you know."*

3.2.3. 'Getting buy-in' – facilitators or inhibitors of change

Staff discussed factors which facilitated or inhibited specific changes. The types of changes ranged from the implementation of training, change involving significant resources and multi-level 'buy-in', or both. Organizational change sometimes involved the implementation of specific types of training. Most changes described were designed and implemented based on local needs, but some changes to practice were part of national initiatives. Some staff identified that changes which made their job easier were more likely to be supported, but overwhelmingly described meeting service user needs as a significant change driver. Staff generally described that they had frequent exposure to training and all staff except one, identified that their organizations frequently discussed and implemented change. Most staff described increasing confidence over time in their organizations ability to change, based on a history of successful change implementation:

> *"Do you know, if you'd asked me four years ago when I was much more cynical, I would have said no chance, but if I sit back and I reflect on what's happened, there's been huge changes. Huge changes."*

3.2.3.1. Ensuring stakeholder 'buy-in'. Service managers were seen as being key 'stakeholders' in driving and supporting change due to their influence on the operational aspects of services. Managers were thought to be important in facilitating vital components of a successful 'change-

culture' such as clear communication, consultation, increasing transparency and helping staff to 'know why' a change was important. Facilitating regular staff meetings, which were open to all staff and disciplines, and where change and new ideas were discussed frequently were viewed as being important. General approaches, such as having an 'open-door' policy, considering new ideas from staff, having an inclusive leadership style, bringing in new ideas regularly from training and conferences were considered as change facilitators. Obtaining support from managers or senior clinicians was seen as fundamental aspect of getting 'buy-in' which was considered imperative for the successful implementation of change:

> *[the change would work]* "*So as long as I had a consultant* [specialism withheld] *who was on board, a couple of* [specialism of nurses withheld] *who were on board and myself and the director and the doctors here*"

There was no evidence of any services or change being fully co-produced with service users, but increasing professional stake-holders belief in the potential success of a change was considered to be important. In practice, this was accomplished through implementing a small scale 'pilot' for a change, or by finding examples in other services where the change had been successful. Staff used a mixture of drawing on experiences of working in other services, conducting pilot initiatives, or obtaining detailed evidence from other services on their successful initiatives:

> "*So that was a huge, huge part of bringing the service to them [service users] and because it was done in another drug service, we knew it worked, that model.*"

3.2.3.2. Ensuring measurement or 'follow through'. All successful changes were characterised by measurement or appraisal of the impact of the change, described by one staff member as 'follow through'. Conversely, in most cases where unsuccessful change was described, having no appraisal process in place was seen as a fundamental reason why the change failed. Internal audit and/or research and implementing mechanisms where this information could be disseminated to staff, were provided as examples of how the impact of change could be measured and sustained. In one case, an audit revealed that targets for a life-saving initiative were not being reached, and this finding increased conscientiousness amongst the team for many other areas of practice:

> [clinical audit] "*I think so, I think so because I think if you can't monitor a change, then there's no point.*"

Clinical supervision was also identified by several staff as something which facilitated the implementation of new ideas and/or training, particularly for more 'nuanced' work, for example that involved in child protection cases and in implementing structured psycho-social interventions such as motivational interviewing or CBT.

> "*But like it* [supervision] *really, really works, I think, to help you work through problems when you're in this. You want to bounce things off and say, 'Did I do that right? Did I do it wrong? Or what do you think of that?' I think it's really, really good like.*"

While most staff were considered to be positively disposed towards change, specific attributes of staff were seen as a factor which worked for and against change implementation. Staff attributes that mitigated against change were identified as having a negative ideological view of addiction, role entrenchment or the personality of the individuals. In terms of changing the service ethos from abstinence to 'compassionate pragmatism', bringing in new staff and staff with these 'negative' traits leaving as well as the opposing ideologies of these staff was seen as a vital catalyst for successful change:

> "*We did have one or two individuals who were not for moving, but they did move because that [change] was happening and you know, one person in particular decided this was no longer for them here, you know, but there was nothing we could do about that.*"

However, there was an acceptance that there would always be some staff that would be opposed to change no matter what. It was considered that while not without difficulty, these staff would be encouraged to change through the 'momentum' of other staff embracing the change:

> "*I often think of the chain on a bicycle, once it starts to move, it's all systems move, you know. The momentum is there. They have to, and if a cog gives, it gives. But the system will have to override it, do you know. It has to override it and that's the difficult bit.*"

3.2.3.3. Risk aversion and lack of resources impeding change. Several staff reported that having knowledge that resources and training would be provided for supporting a change over a time period increased their belief and enthusiasm for supporting change, and also resulted in successful implementation. Poor staff resources in terms of numbers of staff and skill mix, was another factor which worked against change. In one case it was considered impossible to introduce a new drug for OST as it required daily clinical review of a service user and the resources were not available to do this:

> "*But in some places, the cover is very sketchy, you know, and it changes a lot and I think that reflects the… I suppose I'm not talking about the general service now. I suppose I'm talking about the medical part of it. It just really reflects the state that it's at at the moment, you know. And that's how it is.*"

Fear of litigation and fear of risk was also seen as another factor which mitigated against change. This observation was made by several staff. This was noted more specifically around embracing a more harm reduction approach and around changing prescribing practices.

> "*There's so much red tape. I'll tell you, it's fear of litigation. I have never worked in an area that's so fearful.*"

4. Discussion

Findings form this study demonstrate that organizational efficacy is influenced by a multitude of interdependent factors, which are both internal and external to the organization. In the first theme, a services ability to meet user needs was clearly identified as a 'prism' through which the success of change, need to change, and overall organizational efficacy was assessed. However, a need to 'meet people where they are at' was relevant throughout all themes and is clearly a factor in influencing '*change valence*', something which is more likely to lead to successful implementation (Weiner, 2009). In this study, it is notable that organizational factors which either supported or inhibited specific organizational change initiatives *or* helped to meet service user needs were discussed interchangeably, with no clear differentiation. This is broadly consistent with findings from quantitative studies, that many organizational characteristics, such as more openness to change, better team cohesion and good communication, which make a service good at adopting to change, can also relate to how effectively they can influence service user outcomes (Kelly et al., 2017; Kelly et al., 2018).

The provision of clinical supervision for example is something which can benefit organizational functioning across several domains. Supervision provides practical and emotional support for staff which in turn impacts on the retention of staff, their ability to adopt to change, and also helps them to form good therapeutic relationships with service users (Gonge & Buus, 2011; Wheeler & Richards, 2007). In practice, clinical supervision and other supports do not occur in a vacuum and

their provision is likely to be indicative of a healthy organization (Pollock et al., 2017). Conversely, for participants in this study, where supervision was provided for some staff groups and not others, it negatively affected team cohesion and exacerbated a sense of 'them and us' between professional groups.

Many other factors identified here such as clinical audit, team meetings, good leadership, good communication with service users, clarity in job roles, adhering to guidelines and policy, and appropriate skill mix are all features of good clinical governance, which in if adopted correctly can act as a 'lever' in determining successful organizational change (Brault et al., 2015). These are also aspects of a service which are indicative of a healthy organizational 'culture' (Jones et al., 2005). Staff attributes, team cohesion, leadership, communication with service users were some of the factors which support organizational efficacy. Other factors which are external to an organization, such as culture, societal values, policy and how services are planned were also considered to be important. This is consistent with other findings, which identify a broad range of factors which can influence organizational efficacy (Lewis et al., 2020; Louie et al., 2021). Overall, this supports an argument that changes to any aspect of a treatment service and supporting services needs to be considered systemically. In this respect, there is a clear need to 'join up the dots' which may be alternatively described as adopting a more systemic approach to the planning and delivery of services. Based on the findings in this study, this would involve much greater cohesion and co-operation between policy makers, service planners, staff and service users in order to ensure consistency and quality when delivering a range of services across geographical areas.

In relation to supporting specific change implementation or 'getting buy-in', demonstrating potential effectiveness through modelling or piloting and having clear benefits to service users was considered paramount in promoting the 'change message', developing a psychological discrepancy between current and desired practice amongst staff, and increasing belief in the ability to change (Stevens, 2013). A history of successful change implementation, stakeholder involvement, the provision of appropriate resources, leadership, and ensuring appropriate measurement and 'follow through' through clinical audit and clinical supervision were all identified as characteristics of successful change initiatives that result in multi-level 'buy-in'. These findings are all consistent with those emanating from studies in the field of implementation science (Dintrans et al., 2019; Weiner, 2009).

Recruitment and retention of staff was discussed as a factor which simultaneously inhibited the implementation of change and organizational ability to meet the needs of service users. In the context that providing OST services have significant economic benefits for wider society, the pay and conditions and career opportunities awarded to staff are likely to impact on this, and are worthy of further attention (Gossop, 2015; Kroezen et al., 2015). Maintaining good relationships with service users in order to obtain information about changing trends and emerging difficulties, is also likely to be of paramount importance as service user need was consistently identified as a driver of change. There is some indication of what organizational attributes facilitate better engagement with services users such as resources, organizational climate and staff attributes and these should be used to inform policy makers and planners when designing services (Greener et al., 2007).

The Irish context is also unique. There is a long history of the provision of healthcare in Ireland by the voluntary and private sector but most notably by the Catholic church, a body which has, historically at least, a significant impact on the shape of policy making and health and addiction services in Ireland including an over-emphasis on the disease model of addiction (Barrington, 1987; Butler & Mayock, 2005). In this respect, study participants observed a 'paradigm shift' in services over the last decade or so, from abstinence focused ideology to what one interviewee termed 'compassionate pragmatism' or 'meeting people where they are at'. This shift was attributed to social and cultural factors which manifested in different ways in each service, through aspects such as new policies, physical aspects of buildings, changes in the skill mix of staff and changes to practice and leadership. Still, it appears that institutional stigma is still evident in some services through current practices in OST prescribing services and negative views of addiction (Mayock & Butler, 2021a, 2021b; Woo et al., 2017). This 'status-quo' continues to create psychological discrepancy for some staff, who consider this both something that they would *like* to change, but paradoxically identify that this also presents a barrier *to* change (Weiner, 2009).

In Ireland OST services subscribe to high standards of care as outlined by 'Safer Better Healthcare' (Health Information and Quality Authority, 2012) but it is notable that unlike other jurisdictions such as the UK, there is no independent oversight of addiction treatment services in Ireland to ensure enforcement of these standards (Care Quality Commission, 2021). While aspects of good governance, such as clinical audit are evident and specific measures to standardise and improve the internal governance of OST services are explicit in Irish policy, this does not yet appear to have been fully accomplished (Department of Health, 2017; Doyle & Ivanovic, 2009). A partial but weakening explanation for this may have been Irelands 'lost decade' of economic recession from 2008.

Participants in this study identified that inconsistencies in adherence to prescribing guidelines between practitioners seems to be a particular challenge. However, consistency in service delivery, and appropriate risk management need to be appropriately supported requires adequate resources, training and greater attention to overall governance in services including the willingness or ability to support or sanction staff who underperform (Brown et al., 2013; Veenstra et al., 2017). Similarly, inconsistencies in how services are delivered should be addressed through more effective leadership and organization which should also provide a bulwark against staff working in 'silos'.

Over ten years ago, national strategies were put in place to standardise services and to facilitate inter-agency working but these strategic recommendations have yet to be realised (Doyle & Ivanovic, 2009). Overall, more guidance relating to the composition of 'good' services is required and sufficient resources should be put in place to deliver them (Roche & Pidd, 2010). Implementing these and improving overall governance is likely to help to 'meet people where they are at' through 'joining up the dots' and thus increasing overall staff 'buy-in' in responding to immediate service user needs and adopting more significant changes into practice. In summary, based on the findings in this study, the following recommendations for policy and practice ought to be considered:

- The design and full implementation of policies which promote consistency and standardisation across all addiction treatment services, this should include a focus on how to best recruit and retain staff
- External regulation/independent oversight is required to ensure accreditation of services, safe service provision, and consistent service delivery
- Inclusive clinical meetings with all disciplines present will support greater consistency in service delivery
- Sufficient resources should be made available for training, supervision and support across all staff groups and services
- Exemplars of change will help staff understand and adopt new models of service delivery, but the importance of leadership behaviours and other service attributes should also be considered

5. Conclusion

Organizations are complex 'eco-systems' and the specific characteristics of organizations are influenced by a plethora of overlapping and interdependent factors. The findings presented here have identified factors which are important and have implications for the planning and implementation of services, and policy development. While it is clear that these factors are interdependent, the nature of their relationship may be context dependent and whether or not there is a universal 'hierarchy' of factors is worthy of further exploration. Qualitative research

yielded important insights into understanding the factors and circumstances that influence organizational functioning and successful change implementation in Irish community opiate prescribing services.

CRediT authorship contribution statement

Peter Kelly: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing - Original draft, Writing - Review and editing. **Josephine Hegarty:** Supervision, Formal analysis, Data curation, Writing - review and editing. **Kyle Dyer:** Supervision, Formal analysis. **Aine O Donovan:** Supervision, Formal analysis, Data curation, Writing - review and editing.

Appendix 1. Interview schedule

Indicative interview schedule

1. What is your overall view of this service?
2. What do you think works well here?
3. What aspects of this organization could be improved?
4. Can you describe how this service helps service users?
5. From the service user's perspective, what could be improved at this service
6. How would you describe this services ability to adopt to change?
7. Please think about an organizational level change that was required in the last year; e.g.: implementing training, adopting new practices or re-structuring.
   a. What do you think helped to facilitate this change?
   b. What do you think made this change difficult?
8. How do you think this treatment service can be improved?

Probing questions

Elaboration probe:

- Why exactly do you feel that way?
- Can you tell me more about…
- Why is that important to you?

Detail orientated probe:

- When did that happen?
- Who else was involved?

Clarification probe:

- You said that… what do you mean by that?
- What impact do you think…has on….?

Silent probe:

- Remain silent and wait for the participant to continue, perhaps nodding

Echo probe:

- Use a simple reflection "you said that…" and ask "what happened next?"

Uh-huh probe:

- Saying "yes I see" or "uh-huh"

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Appendix 6 Ethical approval letters

Appendix 6. 1 Ethical approval letter from Clinical Research Ethics Committee UCC

UCC
Tel: + 353-21-490 1901
Fax: + 353-21-490 1919
Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland

COISTE EITICE UM THAIGHDE CLINICIÚIL
Clinical Research Ethics Committee
Lancaster Hall,
6 Little Hanover Street,
Cork,
Ireland.

ECM 4 (r) 07/11/17

23rd October 2017

Professor Josephine Hegarty
School of Nursing & Midwifery
University College Cork
Brookfield Health Sciences Complex
College Road
Cork

Re: An exploration of the relationship between organizational dynamics and: 1. the process of innovation adoption 2. client engagement; in substance misuse treatment services in Ireland.

Dear Professor Hegarty

Approval is granted to carry out the above study at:

[redacted]

The following documents have been approved:

- Application Form signed 18th September 2017 (received 19th September 2017)
- Study Protocol Version 1 dated 9th September 2017
- CV for Chief Investigator
- Evidence of Insurance
- Information Leaflet and Study Survey for Staff
- Information leaflet and Consent Form and Interview Guide for Staff Interviews
- Information Leaflet and Study Survey for Clients.

We note that the co-investigators involved in this project will be:

- Mr Peter Kelly, PhD Student and Dr Aine Horgan, Lecturer.

The date of this letter is the date of authorization of the study.

Please keep a copy of this signed approval letter in your study master file for audit purposes.

You should note that ethical approval will lapse if you do not adhere to the following conditions:

1. Submission of an Annual Progress Report/Annual Renewal Survey (due annually from the date of this approval letter)
2. Report unexpected adverse events, serious adverse events or any event that may affect ethical acceptability of the study
3. Submit any change to study documentation (minor or major) to CREC for review and approval. Amendments must be submitted on an amendment application form and revised study documents must clearly highlight the changes and contain a new version number and date. Amendments cannot be implemented without written approval from CREC.

UCC

Tel: + 353-21-490 1901
Fax: + 353-21-490 1919

Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland

COISTE EITICE UM THAIGHDE CLINICIÚIL
Clinical Research Ethics Committee

Lancaster Hall,
6 Little Hanover Street,
Cork,
Ireland.

4. Notify CREC of discontinuation of the study

5. Submit an End of Trial Declaration Form and Final Study Report/Study Synopsis when the study has been completed.

Yours sincerely

Professor Michael G Molloy
Chairman
Clinical Research Ethics Committee
of the Cork Teaching Hospital

The Clinical Research Ethics Committee of the Cork Teaching Hospitals, UCC, is a recognised Ethics Committee under Regulation 7 of the European Communities (Clinical Trials on Medicinal Products for Human Use) Regulations 2004, and is authorised by the Department of Health and Children to carry out the ethical review of clinical trials of investigational medicinal products. The Committee is fully compliant with the Regulations as they relate to Ethics Committees and the conditions and principles of Good Clinical Practice.

Appendix 6. 2 Ethical Approval Letter from Waterford Research Ethics Committee

Ospidéal Ollscoile Phort Láirge
University Hospital Waterford
Regional Cancer Centre South East

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Research Ethics Office
Old School of Nursing
University Hospital Waterford

Tel: 051- 842026/051-842391

Mr. Peter Kelly
School of Nursing and Midwifery
University College cork

4th April 2018

STUDY TITLE: "A study of the relationship between organisational characteristics and service user engagement in substance misuse treatment services"

STUDY STATUS: *APPROVED*

Dear Mr. Kelly,

The Research Ethics Committee, HSE, South East reviewed the above Study and are happy to grant you Full Ethical Approval.

The following documents were reviewed and approved:

1. Research Ethics Standard Application Form.
2. Research Proposal
3. Interview Schedule
   - For Staff: VI: 030218
   - For Service Users: VI: 030218
4. Questionnaire/s
   - Survey for Staff: VI: 030218
   - Survey for Service Users: VI: 030218
5. Participant Information Sheet
   - Survey for Staff: VI: 030218
   - Survey for Service Users: VI: 030218
6. Patient Consent Form
   - Survey for Staff: VI: 030218
   - Survey for Service Users: VI: 030218
7. Letter to the Service Manager CHO5

8. Ethical Approval Letter – UCC
9. Declaration Form

Please notify the Research Ethics Committee Office, Old School of Nursing, University Hospital Waterford on completion of Research.

Yours sincerely,

Caroline Lamb.

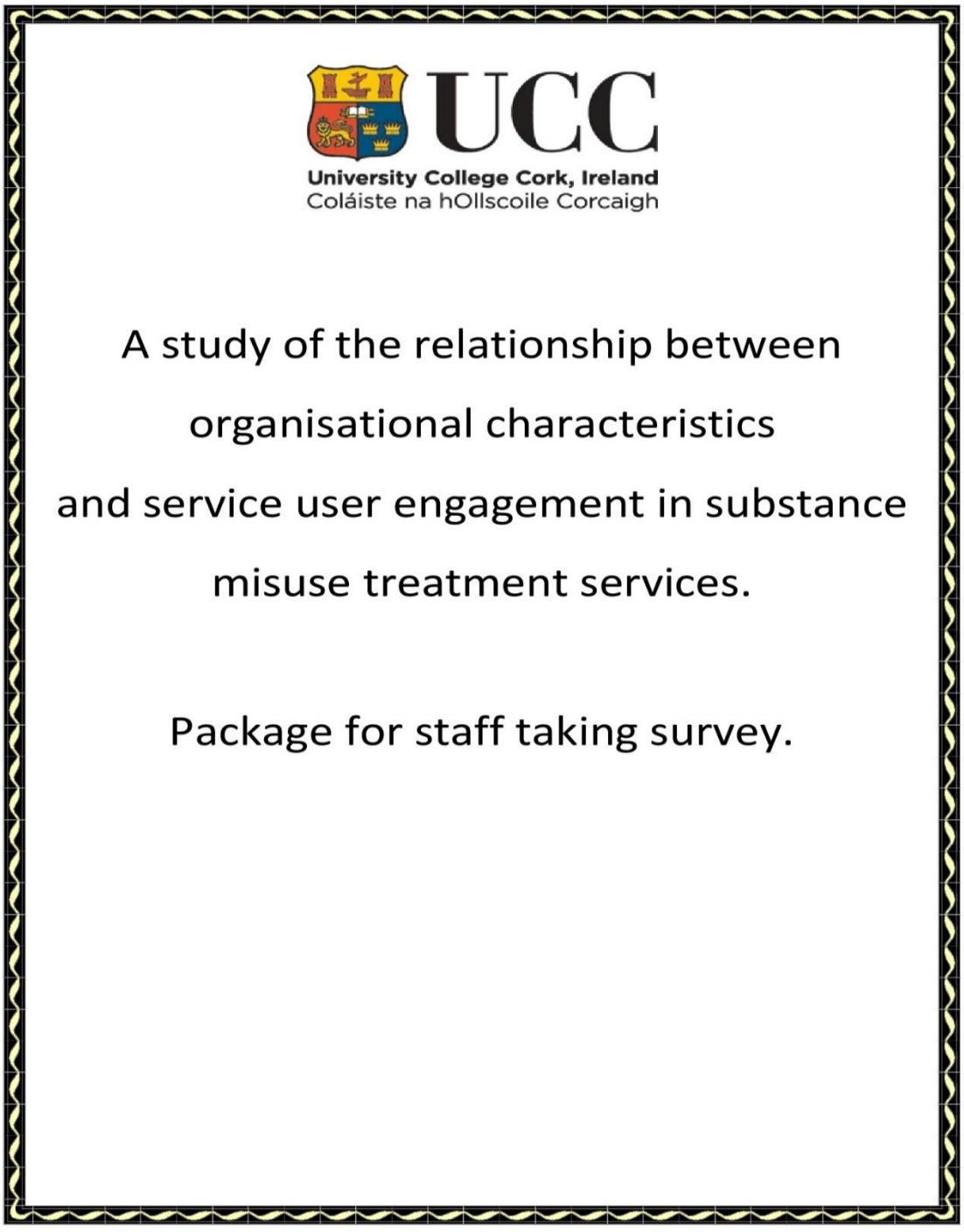
Ms Caroline Lamb
Research Ethics Committee Coordinator
Health Service Executive, South Eastern Area

The Research Ethics Committee, HSE, South East is a recognized Ethics Committee under Regulation 7 of the European Communities (Clinical Trials on Medicinal Products for Human use) Regulations 2004 and as such is authorized to undertake ethical review of clinical trials of all descriptions and classes for the Republic of Ireland.

The Research Ethics Committee, HSE South East issues ethical approval on the basis of information provided. It is the responsibility of the researcher to notify the Research Ethics Office of any changes to a study to ensure that the approval is still relevant.

Appendix 7 Questionnaire Packages and Interview Schedules

Appendix 7. 1 Questionnaire Package for Staff Taking Part in Survey's



University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

School of Nursing and Midwifery,
Brookfield Health Sciences Complex,
University College Cork,
Ireland.
Tel: 021-490 1493

Participant information sheet (Staff)

Title of this study: A study of the relationship between organisational characteristics and service user engagement in substance misuse treatment services.

About this study: Specifically, we want to know more about your perceptions of how your organisation works. We will also be asking service users of the service their views, to see if there is a relationship between the two. Overall, we are interested in what aspects of substance misuse treatment services work most effectively.

Who is doing the research? This study is being conducted by Peter Kelly, who is a PhD student from The School of Nursing and Midwifery at University College Cork (UCC) as a part of a doctoral thesis. The study is being supervised by a research team from UCC.

How can I get involved? You can play an important part in the research by filling out a survey which will take 20-25 minutes to complete. Taking part is voluntary and your answers are completely confidential. The questionnaire will be submitted anonymously with only a code to identify your service. Only the researcher will have access to this code. It will not be possible to identify you or your service from any published material relating to this study. You can withdraw from this study at any time but because the survey is anonymous, this will not be possible once you have submitted your questionnaire. Other researchers may be given access to this anonymous data. As this survey is anonymous, consent is implied through your completion of the form.

What are the potential benefits of taking part? Taking part in this study may provide you with an opportunity to think about the organisation in which you work and what works well and what does not work so well. The information that you provide will be used to make recommendations on how to improve services for staff and service users.

What are the potential risks in taking part? The questionnaire takes approximately 20-25 minutes to complete and this may cause you some inconvenience. You can refuse to take part in the study or withdraw from the study at any time, without having to provide any justification for doing so.

If you have concerns about any aspect of this study, please do not hesitate to contact the research team using the details here: Website: http://www.ucc.ie/en/nursingmidwifery/ Telephone number: 021- 490 1493.

If you have any questions, complaints or suggestions, feel free to contact Professor Josephine Hegarty (Principal Investigator) josephine.hegarty@ucc.ie or Peter Kelly (PhD Student) pkelly@wit.ie

Staff

This survey asks questions about how you see yourself as a staff member and how you see your service. It begins on the next page with a short demographic section that is for descriptive purposes only.

To complete the form, please mark your answers by crossing the appropriate box. If you do not feel comfortable giving an answer to a statement, you may skip it and move on to the next statement. If an item does not apply to you or your workplace, leave it blank.

Please do not fold the forms. The examples below show how to mark the boxes.
Please use **BLACK** pen when completing the form, do not use pencil.

For Example

	Disagree Strongly	Disagree	Uncertain	Agree	Agree Strongly
Person 1, I like chocolate ice cream	☐	☒	☐	☐	☐

This person disagrees so she probably doesn't like chocolate ice cream.

Person 2, I like chocolate ice cream	☐	☐	☐	☐	☒

This person likes chocolate ice cream a lot.

Centre			

Staff Survey

Today's Date: _____/_____/_____

Your information

Do you work with:

Drug users only ☐ Alcohol users only ☐ Both drug and alcohol users ☐

1. Are you

Male ☐ Female ☐ Other ☐

How old are you? (years) _____

2. Are you

White

Irish ☐ Irish Traveller ☐ Any other White background ☐

Black or Black Irish

African ☐ Any other Black Background ☐

Asian or Asian Irish

Chinese ☐ Any other Asian Background ☐

Other ethnic group, including mixed background (please specify) ☐

---

3. Educational Status- highest level achieved

No school qualifications	☐
Currently studying for a qualification	☐
Inter Cert/Junior Cert or equivalent	☐
Leaving Cert/Senior Cert or equivalent	☐
Degree or equivalent	☐
Masters	☐
PhD	☐

4. Discipline/Profession: (MARK ALL THAT APPLY)

Addiction Counsellor	☐	Psychiatry	☐
Other Counsellor	☐	GP	☐
Project worker	☐	Nursing	☐
Keyworker	☐	Nurse Specialist	☐
Criminal Justice drug worker	☐	Administration	☐
Psychology	☐	None, student	☐
Social Worker	☐	Primary Care Worker	☐
Pharmacist	☐	Other	☐

Other (Specify)_____

5. Qualification status in addiction field

Not qualified or accredited in addiction	☐	Currently qualified & accredited	☐
Qualified-not currently accredited	☐		

6. How many years of experience do you have working in substance misuse treatment?

Under 6 months	☐
6-11 months	☐
1 to 3 years	☐
4 to 5 years	☐
Over 5 years	☐

7. How long have you been in your present job?

Under 6 months	☐
6-11 months	☐
1 to 3 years	☐
4 to 5 years	☐
Over 5 years	☐

8. How many service users are you current treating (i.e. your caseload)?

1-10	☐
11-20	☐
21-30	☐
31-39	☐
More than 40	☐

DRUG TREATMENT UNIT INFORMATION

1. Is your drug treatment service – [MARK ONE]

Statutory sector (HSE Service)	☐
Voluntary sector (one of several drug treatment services under a parent organisation)	☐
Voluntary sector (not part of a parent organisation)	☐
Private/for profit service	☐

2. Which <u>one</u> of the following best <u>describes</u> this treatment unit? [MARK ALL THAT APPLY]

Structured day programme	☐	Other structured treatment	☐
Structured keyworking/counselling	☐	Supported accommodation	☐
Methadone treatment (Specialist or GP Prescribing)	☐	Advice and information	☐
Residential rehabilitation	☐	Harm reduction	☐
Inpatient Treatment	☐	Other (please specify)	☐

_____

3. Which one category best describes the primary setting of this treatment unit? [MARK ONE]

General Hospital	☐	Family/children service agency	☐
Social services agency	☐	Other multi-service agency	☐
Psychiatric or other specialised hospital	☐	Prison	☐
Primary care setting	☐	Young offenders institute	☐
Mental health service setting	☐	Private practice	☐
Free standing substance misuse service	☐	Other (please specify)	☐

4. How would you describe the area covered by this service? [MARK ONE]

Rural	☐
Urban	☐

5. Substance misuse problems treated within this service? [MARK ONE]

Alcohol problems only	☐
Drug problems only	☐
Both alcohol and drug problems	☐

6. Does your unit mainly serve? [Mark ALL that Apply]

	Yes	No
Adults?	☐	☐
Young People?	☐	☐
Criminal Justice Referrals?	☐	☐
Women Only?	☐	☐
Women with Children?	☐	☐
Dual Diagnosis Service users?	☐	☐

Staff Questionnaire

PLEASE FILL IN THE CIRCLE THAT SHOWS YOUR ANSWER TO EACH ITEM-

INDICATING YOUR LEVEL OF AGREEMENT OR DISAGREEMENT WITH EACH STATEMENT

	DISAGREE STRONGLY	DISAGREE	UNCERTAIN	AGREE	AGREE STRONGLY
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Your <u>service needs additional guidance</u> in –					
1. Assessing service user needs.	O	O	O	O	O
2. Matching needs with services.	O	O	O	O	O
3. Increasing treatment participation by service users.	O	O	O	O	O
4. Measuring service user performance.	O	O	O	O	O
5. Developing more effective group sessions.	O	O	O	O	O
6. Raising the overall quality of keyworking or counselling.	O	O	O	O	O
7. Using service user assessments to guide clinical and other treatment decisions.	O	O	O	O	O
8. Using service user assessments to document treatment effectiveness.	O	O	O	O	O
<u>You</u> need more training for –					
9. Assessing service user problems and needs. ...	O	O	O	O	O
10. Increasing service user participation in treatment.	O	O	O	O	O
11. Monitoring service user progress.	O	O	O	O	O
12. Improving rapport with service users.	O	O	O	O	O
13. Improving service user thinking and problem solving skills.	O	O	O	O	O
14. Improving behavioural management of service users.	O	O	O	O	O
15. Improving cognitive focus of service users.....	O	O	O	O	O
16. Using computerised service user assessments.	O	O	O	O	O

	Disagree Strongly (1)	*Disagree* (2)	*Uncertain* (3)	*Agree* (4)	*Agree Strongly* (5)
Current pressures to make service changes come from –					
17. Service users in the service.	O	O	O	O	O
18. Service staff members.	O	O	O	O	O
19. Service supervisors or managers.	O	O	O	O	O
20. Senior managers/ trustees	O	O	O	O	O
21. Community action groups.	O	O	O	O	O
22. Funding and oversight agencies.	O	O	O	O	O
23. Accreditation bodies	O	O	O	O	O
How strongly do you agree or disagree with each of the following statements?					
24. You feel overwhelmed by paperwork.	O	O	O	O	O
25. Your offices and equipment are adequate.	O	O	O	O	O
26. You have the skills needed to conduct effective groupwork.	O	O	O	O	O
27. Some staff get confused about the main goals for this service.	O	O	O	O	O
28. Staff here all get along very well.	O	O	O	O	O
29. Service staff understand how this service fits as part of the treatment system in your community.	O	O	O	O	O
30. Treatment planning decisions for service users here often have to be revised by a supervisor.	O	O	O	O	O
31. Staff training and continuing education are priorities at this service.	O	O	O	O	O
32. Facilities here are adequate for conducting groupwork.	O	O	O	O	O
33. You frequently share knowledge relevant to your role with other staff.	O	O	O	O	O
34. You were satisfied with the training offered at workshops available to you last year.	O	O	O	O	O

		Disagree Strongly (1)	*Disagree* (2)	*Uncertain* (3)	*Agree* (4)	*Agree Strongly* (5)
35.	You used the Internet (World Wide Web) to communicate with other treatment professionals (e.g., list serves, bulletin boards, chat rooms) in the past month.	O	O	O	O	O
36.	Management here fully trusts your professional judgment.	O	O	O	O	O
40.	There is too much friction among staff members here.	O	O	O	O	O
41.	Ideas and suggestions from staff get fair consideration by service management.	O	O	O	O	O
42.	Staff generally regard you as a valuable source of information.	O	O	O	O	O
43.	You have easy access for using the Internet at work.	O	O	O	O	O
44.	The staff here generally work together as a team.	O	O	O	O	O
45.	Service user assessments here are usually conducted using a computer.	O	O	O	O	O
46.	Your duties are clearly related to the goals of this service.	O	O	O	O	O
47.	You learned new skills or techniques at a professional conference in the past year.	O	O	O	O	O
48	You consistently plan ahead and carry out your plans.	O	O	O	O	O
49.	You are under too many pressures to do your job effectively.	O	O	O	O	O
50.	Staff here are given broad authority in treating their own clients	O	O	O	O	O
51.	This service encourages and supports professional growth.	O	O	O	O	O
52.	You read about new techniques and treatment information each month.	O	O	O	O	O
53.	Staff here are always quick to help one another when needed.	O	O	O	O	O
54.	Computer problems are usually repaired promptly at this service.	O	O	O	O	O

	Disagree Strongly (1)	Disagree (2)	Uncertain (3)	Agree (4)	Agree Strongly (5)
55. Novel treatment ideas by staff are discouraged.	O	O	O	O	O
56. There are enough frontline staff here to meet current service user needs.	O	O	O	O	O
57. The budget here allows staff to attend professional conferences each year.	O	O	O	O	O
58. You have enough opportunities to keep your skills up-to-date.	O	O	O	O	O
59. Mutual trust and cooperation among staff in this service are strong.	O	O	O	O	O
60. Most service user records here are computerised.	O	O	O	O	O
61. You are willing to try new ideas even if some staff members are reluctant.	O	O	O	O	O
62. Learning and using new procedures are easy for you.	O	O	O	O	O
63. This service operates with clear goals and objectives.	O	O	O	O	O
64. Staff members often show signs of stress and strain.	O	O	O	O	O
65. You feel like you aren't making a difference.	O	O	O	O	O
66. You usually accomplish whatever you set your mind on.	O	O	O	O	O
67. It is easy to change procedures here to meet new conditions.	O	O	O	O	O
68. Staff here often try out different techniques to improve their effectiveness.	O	O	O	O	O
69. You used the Internet (World Wide Web) to access drug treatment information in the past month.	O	O	O	O	O
70. The formal and informal communication channels here work very well.	O	O	O	O	O
71. Offices here allow the privacy needed for 1:1 work with service users	O	O	O	O	O
72. You are sometimes too cautious or slow to make changes.	O	O	O	O	O

	Disagree Strongly (1)	Disagree (2)	Uncertain (3)	Agree (4)	Agree Strongly (5)
73. Staff members are given too many rules here.	O	O	O	O	O
74. You feel that it is a real effort to come into work.	O	O	O	O	O
75. Service staff are generally kept well informed.	O	O	O	O	O
76. The heavy workload here reduces service effectiveness.	O	O	O	O	O
77. You regularly read professional journal articles or books on drug use treatment.	O	O	O	O	O
78. You feel depressed.	O	O	O	O	O
79. Other staff often ask your advice about service procedures.	O	O	O	O	O
80. More open discussions about service issues are needed here.	O	O	O	O	O
81. This service holds regular in service training.	O	O	O	O	O
82. You frequently hear good staff ideas for improving treatment.	O	O	O	O	O
83. Other staff often ask for your opinions about treatment issues.	O	O	O	O	O
84. You are effective and confident in doing your job.	O	O	O	O	O
85. You have a computer to use in your personal office space at work.	O	O	O	O	O
86. Everybody here does their fair share of work.	O	O	O	O	O
87. A larger support staff is needed to help meet service needs.	O	O	O	O	O
88. The general attitude here is to use new and changing technology.	O	O	O	O	O
89. You do a good job of regularly updating and improving your skills.	O	O	O	O	O
90. Staff members always feel free to ask questions and express concerns in this service.	O	O	O	O	O

		Disagree Strongly (1)	Disagree (2)	Uncertain (3)	Agree (4)	Agree Strongly (5)
91.	You have the skills needed to conduct effective 1:1 work with service users	O	O	O	O	O
92.	Staff frustration is common here.	O	O	O	O	O
93.	You feel tired.	O	O	O	O	O
94.	Management here has a clear plan for this service.	O	O	O	O	O
95.	You often influence the decisions of other staff here.	O	O	O	O	O
96.	You have convenient access to e-mail at work	O	O	O	O	O
97.	You are encouraged here to try new and different techniques.	O	O	O	O	O
98.	You are able to adapt quickly when you have to shift focus.	O	O	O	O	O
99.	You feel disillusioned and resentful.	O	O	O	O	O
100.	You are viewed as a leader by other staff here.	O	O	O	O	O
101.	Computer equipment at this service is mostly old and outdated.	O	O	O	O	O
102.	This service provides a comfortable reception/waiting area for service users.	O	O	O	O	O
103.	Staff here feel comfortable using computers.	O	O	O	O	O
104.	Frequent staff turnover is a problem for this service.	O	O	O	O	O
105.	Staff here are able to spend enough time with service users.	O	O	O	O	O
106.	Support staff here have the skills they need to do their jobs.	O	O	O	O	O
107.	Clinical staff here are well-trained.	O	O	O	O	O
108.	More computers are needed in this service for staff to use.	O	O	O	O	O
109.	You were satisfied with the training opportunities available to you last year.	O	O	O	O	O
110.	You feel that talking to service users is a waste of time.	O	O	O	O	O

	None	1	2	3	4 or more
111. In the last year, how often did you attend training workshops held within 50 kilometres of your agency?	O	O	O	O	O
112. In the last year, how often did you attend training workshops held more than 50 kilometres from your agency?	O	O	O	O	O
113. How many workshops do you expect to attend in the next 12 months?	O	O	O	O	O
114. In the last year, how many times did outside trainers come to your agency to give workshops?	O	O	O	O	O
115. In the last year, how many times did your agency offer special, in-house training?	O	O	O	O	O

	Never	Rarely	Sometimes	A lot	Almost Always
116. When you attend workshops, how often do you try out the new interventions or techniques learned?	O	O	O	O	O
117. Are service users here interested or responsive to new ideas or materials when you try them?	O	O	O	O	O
118. In recent years, how often have you adopted (for regular use) new interventions or techniques from a workshop?	O	O	O	O	O
119. When you have adopted new ideas into your 1:1 work, how often have you encouraged other staff to try using them?	O	O	O	O	O
120. How often do new interventions or techniques that the staff from your service learn at workshops get adopted for general use?	O	O	O	O	O
121. How often do new ideas learned from workshops get discussed or presented at your staff meetings?	O	O	O	O	O
122. How often does the management at your service recommend or support new ideas or techniques for use by all frontline staff?	O	O	O	O	O

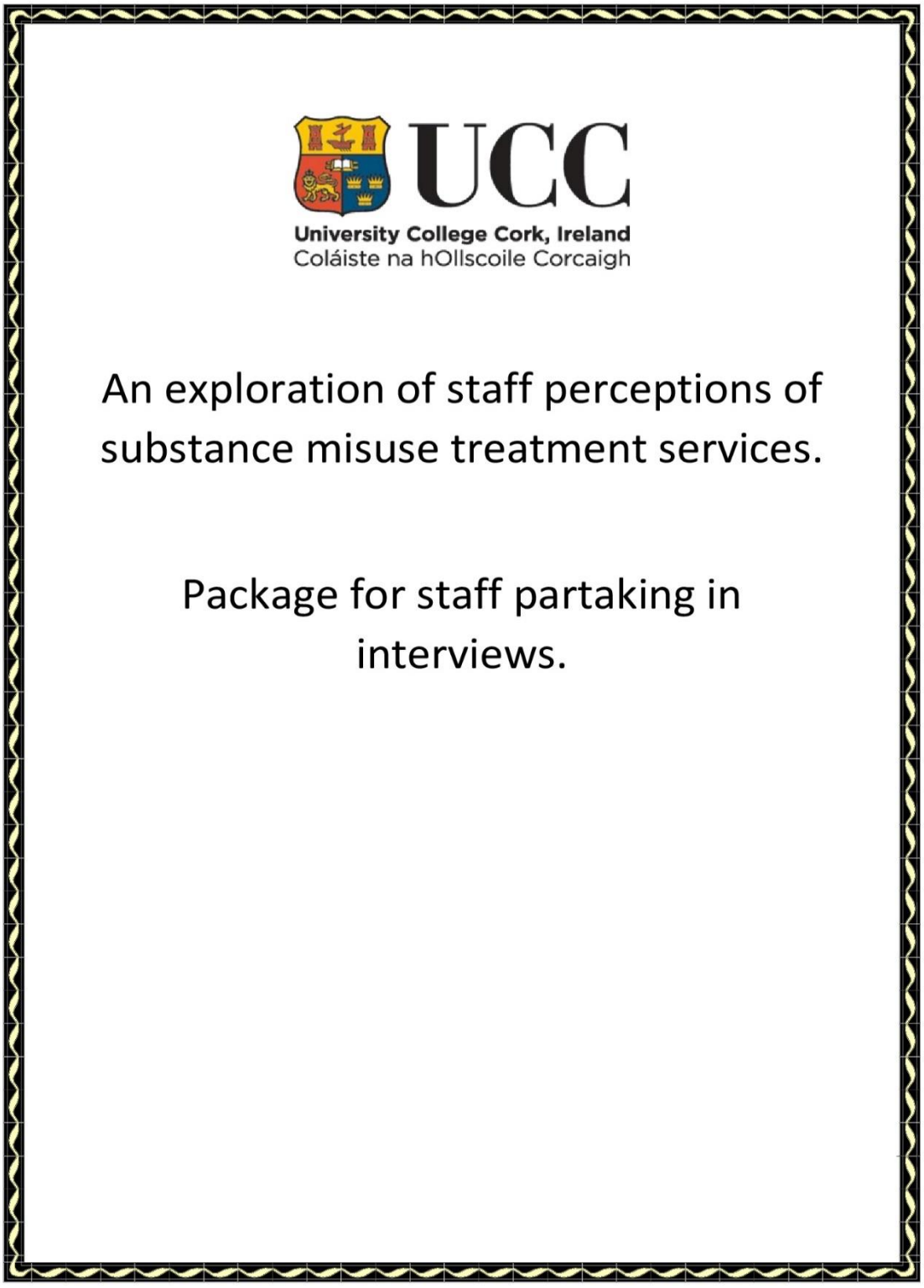
		Disagree Strongly (1)	Disagree (2)	Uncertain (3)	Agree (4)	Agree Strongly (5)
123.	Service users with mental health and substance use problems receive adequate support at this service	O	O	O	O	O
124.	Staff here need more training on how to deal with service users who have mental health problems	O	O	O	O	O
125.	When it is required, care is well co-ordinated between this service and mental health services	O	O	O	O	O
126.	Medically supervised injecting centres are a good idea overall	O	O	O	O	O
127.	A medically supervised safe injecting centre could be adequately facilitated here	O	O	O	O	O
128.	I feel that I am competent in dealing with service users who use new psychoactive substances	O	O	O	O	O
129.	This service can deal adequately with service users who use new psychoactive substances	O	O	O	O	O
130.	This service adequately meets the needs of culturally and linguistically diverse populations	O	O	O	O	O
131.	Providing take home naloxone for service users here, is a good idea	O	O	O	O	O
132.	Care planning is led by service users here	O	O	O	O	O
133.	Service users here get to decide their own treatment goals	O	O	O	O	O

What factors have helped this service to successfully implement changes?
Please write some comments in the box provided below.

What factors have acted as a barrier, or have hindered this service, in terms of successfully implementing changes?
Please write some comments in the box provided below.

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. PLEASE RETURN IT TO THE RESEARCHER IN THE SEALED ENVELOPE WHICH HAS BEEN PROVIDED.

Appendix 7. 2 Package for Staff Taking Part in in Interviews



University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

School of Nursing and Midwifery,
Brookfield Health Sciences Complex,
University College Cork,
Ireland.
Tel: 021-490 1493

Participant information sheet for interviews (Staff)

Title of this study: A study of the relationship between organisational characteristics and service user engagement in substance misuse treatment services.

About this study: We want to know about your perceptions of how your organisation works. We will also be asking service users of the service their views to see if there is a relationship between the two. Specifically, we are interested in how to make organisations function more effectively.

Who is doing the research? This study is being conducted by Peter Kelly, who is a PhD student from The School of Nursing and Midwifery at University College Cork (UCC) as a part of a doctoral thesis. The study is being supervised by a research team from UCC.

What are the potential benefits of taking part? Taking part in this study may provide you with an opportunity to think about the organisation in which you work and what works well and what does not work so well. The information that you provide will be used to make recommendations on how to improve services for staff and service users.

What are the potential risks in taking part? The interview will take approximately 30 minutes to complete and this may cause you some inconvenience. You can refuse to take part in the study or withdraw from the study at any time, without having to provide any justification for doing so.

How can I get involved? You can play an important part in the research by participating in a 30 minute interview with the researcher. Taking part is voluntary and your answers are completely confidential. The interview will be recorded using only a code to identify your service. Only the researcher will have access to this code. It will not be possible to identify you or your service from any published material relating to this study. You can withdraw from this study at any time but because the data is collected anonymously, this will not be possible once you have completed your interview. Recordings will be stored in a safe and secure area and will be destroyed 18 months after the completion of this project, but anonymous data such as interview transcripts may be stored indefinitely. Other researchers may be given access to this anonymous data.

If you have concerns about any aspect of this study, please do not hesitate to contact the research team using the details here: Website: http://www.ucc.ie/en/nursingmidwifery/ Telephone number: 021-490 1493.

If you have any questions, complaints or suggestions, feel free to contact Professor Josephine Hegarty (Principal Investigator) josephine.hegarty@ucc.ie or Peter Kelly (PhD Student) pkelly@wit.ie

Consent Form for interviews- Staff

A study of the relationship between organisational characteristics and service user engagement in substance misuse treatment services

Researcher: Peter Kelly, School of Nursing and Midwifery, University College Cork.

Telephone number: 085-7391996

If you are happy to be in the study, please

- **Write your name in the box below.**
- **Sign your name at the bottom of the next page.**
- **Put the date at the bottom of the next page.**

You should only say yes to being in the study if you know what it is about and you want to be in it. If you do not want to be in the study then you do not need to sign this form.

I, _____ **am happy to be in this research study.**

By Saying yes to this study, I am happy that:


I have read the information about the study


Someone has talked to me about the study


My questions have been answered


I understand it is my choice to help with the study


I understand that I can stop taking part in the interview at any time


I agree to be interviewed **(circle your choice):**  **YES**  **NO**


I understand that I will be recorded as a part of the study


I am happy to take part in this study

Name: _____ **Date:** ___/___/___

Indicative interview schedule for staff

1. What is your overall view of this service?
2. What do you think works well here?
3. What aspects of this organisation could be improved?
4. Can you describe how this service helps service users?
5. From the service user's perspective, what could be improved at this service
6. How would you describe this services ability to adopt to change?
7. Please think about an organizational level change that was required in the last year;
   e.g.: implementing training, adopting new practices or re-structuring.
   a) What do you think helped to facilitate this change?
   b) What do you think made this change difficult?
8. How do you think this treatment service can be improved?

Probing questions

Elaboration probe:

- Why exactly do you feel that way?
- Can you tell me more about…….
- Why is that important to you?

Detail orientated probe:

- When did that happen?
- Who else was involved?

Clarification Probe:

- You said that……. what do you mean by that?
- What impact do you think……..has on……..?

Silent Probe:

- Remain silent and wait for the participant to continue, perhaps nodding

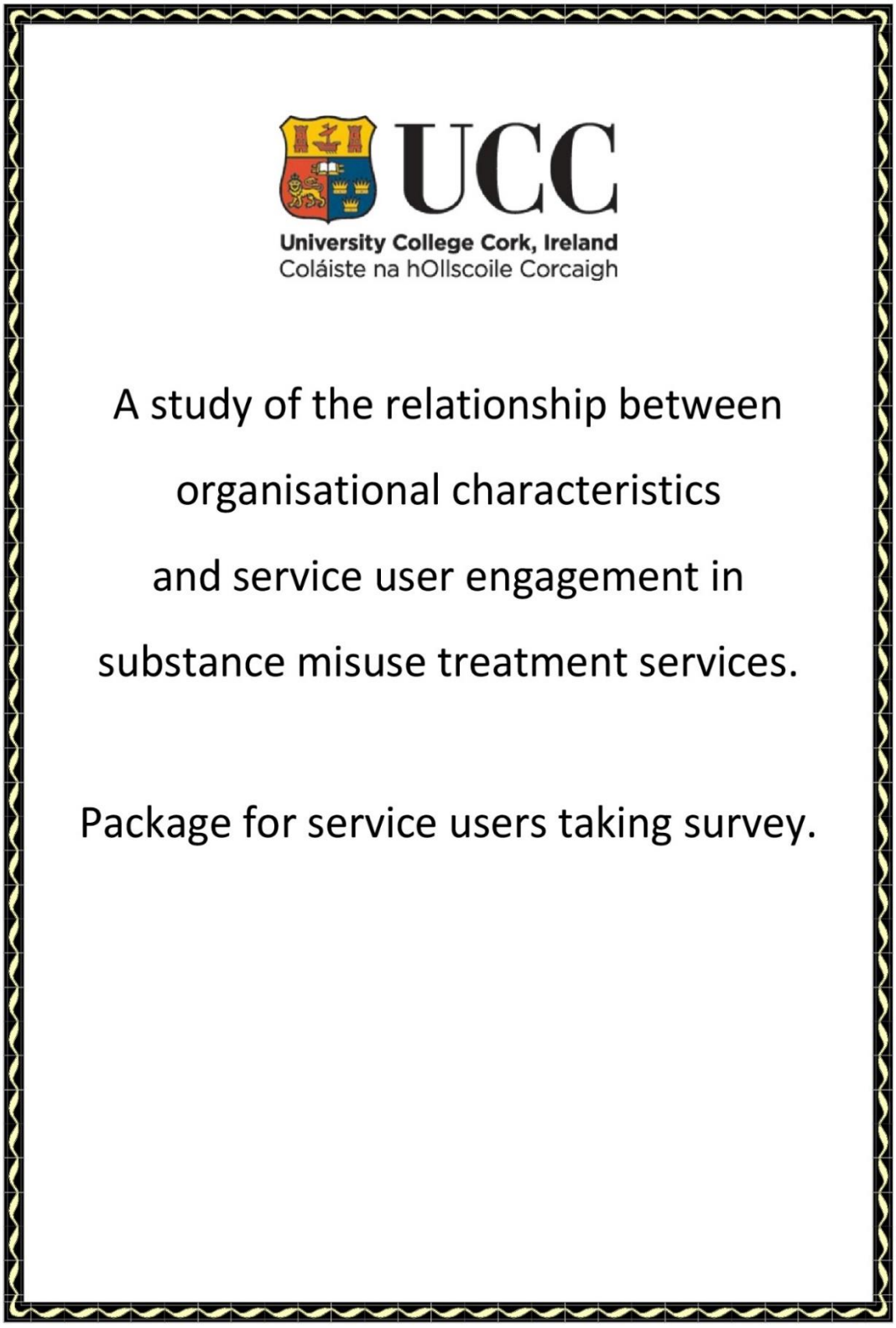
Echo probe:

- use a simple reflection "you said that….." and ask "what happened next?"

Uh-huh probe:

- saying "yes I see" or "uh-huh"

Appendix 7. 3 Questionnaire Package for Service Users Taking Part in Survey's



Centre			

SERVICE USER ENGAGEMENT QUESTIONNAIRE

This survey asks questions about what parts of being in treatment are working well for you, and also collects some information on what could be improved. It begins on this page by asking you some short questions about yourself. Following this you will be asked questions which will relate to how you view your service.

To complete the form, please mark your answers by crossing the appropriate box. If you do not feel comfortable giving an answer to a particular statement, you may skip it and move on to the next statement. If an item does not apply to you or your treatment centre, leave it blank.

Please do not fold the forms. The examples below show how to mark the boxes.
Please use **BLACK** pen when completing the form, do not use pencil.

For Example

	Disagree Strongly	Disagree	Uncertain	Agree	Agree Strongly
Person 1, I like chocolate ice cream	☐	☒	☐	☐	☐

This person disagrees so she probably doesn't like chocolate ice cream.

Person 2, I like chocolate ice cream	☐	☐	☐	☐	☒

This person likes chocolate ice cream a lot.

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

School of Nursing and Midwifery,
Brookfield Health Sciences Complex,
University College Cork,
Ireland.
Tel: 021-490 1493

Participant information sheet (Service user)

Title of this study: A study of the relationship between organisational characteristics and service user engagement, in substance misuse treatment services.

About this study: Specifically, we want to understand more about how you see certain aspects of your treatment. We will also be asking staff in the service their views, to see if there is a relationship between the two. Overall, we are interested in what aspects of substance misuse treatment services work most effectively.

Who is doing the research? This study is being conducted by Peter Kelly, who is a PhD student from the The School of Nursing and Midwifery at University College Cork (UCC). The study is being supervised by a research team from UCC.

How can I get involved?

- By filling out a questionnaire, which will take 5-10 minutes to complete
- Taking part is voluntary and as the questionnaire will be submitted anonymously, your answers are completely confidential except in circumstances where there is a risk of serious harm to another person, or a risk of harm to a person under the age of 18
- When you are taking part, you can decide to stop at any time without having to explain why
- Because the questionnaire is anonymous, you cannot withdraw it once it has been submitted

What are the risks in taking part? We understand that the experience of being in treatment can be difficult for people. Should you feel upset by the topics included in this questionnaire, please feel free to stop answering it. You do not have to provide an explanation for stopping. We will ensure that you receive support from a staff member or the service manager if you need it.

What are the benefits of taking part? Taking part might help to increase your awareness of what aspects of treatment you like or dislike. This may help you to clarify any doubts that you have about treatment. In the long-term, it is hoped that your opinions will be used help to improve treatment services.

If you have concerns about any aspect of this study, please do not hesitate to contact the research team using the details here: Website: http://www.ucc.ie/en/nursingmidwifery/ . Telephone Number: 021- 490 1493.

If you have any questions, complaints or suggestions, feel free to contact Professor Josephine Hegarty (Principal Investigator) josephine.hegarty@ucc.ie or Peter Kelly (PhD Student) pkelly@wit.ie

1. ADMINISTRATIVE DETAILS

Centre Type_____

Age _____ How long in treatment (this episode, months) _____

2. SEX

Male ☐ Female ☐ Other ☐

3. SELF DEFINED SEXUAL ORIENTATION

Heterosexual ☐ Homosexual ☐ Bi-Sexual ☐ Do not wish to answer this question ☐

4. LIVING WHERE

Stable accommodation ☐ Homeless ☐ Prison Institution (Residential/Halfway House) ☐ Not Known ☐

5. LIVING WITH WHOM

Alone ☐ Parents/Family ☐ Partner (alone) ☐ Partner & Children ☐

Alone & Children ☐ Foster Care/Other ☐ Not Known ☐

6. NUMBER OF CHILDREN

Number of Children ☐☐

7. AREA OF RESIDENCE

☐

7. (b) CITY/ COUNTY

☐

8. EDUCATION: HIGHEST LEVEL

Primary Level Incomplete ☐ Primary Level ☐ Junior Cert ☐ Leaving Cert ☐

Third Level ☐ Never Went to School ☐ Not Known ☐

9. AGE LEFT PRIMARY OR SECONDARY SCHOOL FOR THE FIRST TIME

Age ☐ Never went to school ☐ Still at school ☐ Not known ☐

10. EMPLOYMENT STATUS

In paid employment ☐ Unemployed ☐ Training Courses ☐ Student ☐

Housewife/Husband ☐ Retired/Unable to Work ☐ Other ☐ Not known ☐

11. COUNTRY OF BIRTH

Ireland ☐ Other ☐ Not Known ☐ If Other, specify Country _____

12. ETHNIC/CULTURAL BACKGROUND

Irish ☐ Irish Traveller ☐ Any other White Background ☐ Black African ☐

Any other Black Background ☐ Asian Chinese ☐ Any other Asian Background ☐ Other, including mixed background ☐

I Do not wish to answer this question ☐ Unknown ☐

13. SPEAKS A LANGUAGE OTHER THAN ENGLISH AT HOME

Yes ☐ No ☐ Not known ☐

14. MAIN REASON FOR REFERRAL

Alcohol ☐ Drug (Specify) ☐ Concerned Person ☐ Other Problem ☐

SERVICE USER ENGAGEMENT

	Disagree Strongly (1)	*Disagree* (2)	*Uncertain* (3)	*Agree* (4)	*Agree Strongly* (5)
Please indicate how much you AGREE or DISAGREE with each statement by filling in each circle					
1. You trust your counsellor/keyworker.	O	O	O	O	O
2. Time schedules for one to one sessions at this service are convenient for you.	O	O	O	O	O
3. It's always easy to follow or understand what your counsellor/keyworker is trying to tell you.	O	O	O	O	O
4. This service expects you to learn responsibility and self-discipline.	O	O	O	O	O
5. Your counsellor/keyworker is easy to talk to.....	O	O	O	O	O
6. You are willing to talk about your feelings during counselling/keyworking	O	O	O	O	O
7. This service is organised and run well.	O	O	O	O	O
8. You are motivated and encouraged by your counsellor/keyworker.	O	O	O	O	O
9. You have made progress with your drug/alcohol problems.	O	O	O	O	O
10. You are satisfied with this service.	O	O	O	O	O
11. You have learned to analyse and plan ways to solve your problems.	O	O	O	O	O
12. You have made progress toward your treatment service goals.	O	O	O	O	O
13. You always attend the one to one sessions scheduled for you.	O	O	O	O	O
14. Your counsellor/keyworker recognizes the progress you make in treatment.	O	O	O	O	O

	Disagree Strongly (1)	Disagree (2)	Uncertain (3)	Agree (4)	Agree Strongly (5)
15. Your counsellor/keyworker is well organised and prepared for each counseling session.	O	O	O	O	O
16. Your counsellor/keyworker is sensitive to your situation and problems.	O	O	O	O	O
17. Your treatment plan has reasonable objectives.	O	O	O	O	O
18. Your counsellor/keyworker views your problems and situations realistically.	O	O	O	O	O
19. Other service user at this service care about you and your problems.	O	O	O	O	O
20. You have stopped or greatly reduced your drug use while in this service.	O	O	O	O	O
21. Your counsellor/keyworker helps you develop confidence in yourself.	O	O	O	O	O
22. You always participate actively in your counseling/keyworking sessions.	O	O	O	O	O
23. You have made progress in understanding your feelings and behavior.	O	O	O	O	O
24. Other service users at this service are helpful to you.	O	O	O	O	O
25. You have improved your relations with other people because of this treatment.	O	O	O	O	O
26. The staff here are efficient at doing their job.	O	O	O	O	O
27. You are similar to (or like) other service users of this service.	O	O	O	O	O
28. You have made progress with your emotional or psychological issues.	O	O	O	O	O
29. Your counsellor/keyworker respects you and your opinions.	O	O	O	O	O
30. You have developed positive trusting friendships while in this service.	O	O	O	O	O
31. You give honest feedback during counsellor/keyworker sessions.	O	O	O	O	O
32. You can depend on your counsellor/keyworker's understanding.	O	O	O	O	O

	Disagree Strongly (1)	Disagree (2)	Uncertain (3)	Agree (4)	Agree Strongly (5)
33. There is a sense of family (or community) in this service.	O	O	O	O	O
34. You can get plenty of personal keyworking or counselling at this service.	O	O	O	O	O
35. This service location is convenient for you.	O	O	O	O	O
36. You are following your counsellor or keyworker's guidance.	O	O	O	O	O
37. Mostly, I get to decide my own treatment goals here	O	O	O	O	O

What you think works well in this service? Please provide additional comments in the box below.

What changes you would like to see made at this service? Please provide additional comments in the box below.

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. PLEASE RETURN IT TO THE RESEARCHER IN THE SEALED ENVELOPE WHICH HAS BEEN PROVIDED.

Appendix 8 Expert Review of Instruments

Appendix 8. 1 Summary of Review by 8 Subject Experts

Please review all questions within the questionnaire.

Section 1: Summary review of questionnaire

Reviewer	Comments
1	None
2	"4. Measuring service user performance : The word performance is not clear, what does it mean? I know you have not changed it but it is confusing and perhaps even derogatory?" "In terms of the phrasing about counsellor/keyworker what if one has both and is only happy with the keyworker and not say the counsellor?"
3	None
4	"All of the language appears fine to me"
5	**Staff Questionnaire:** Q2. Suggested change to matching service users needs with services Q4. Suggested change to measuring treatment outcomes for service users rather then performance Q6. Suggested change to the role of key worker Q7. I am a bit unclear on this question is it a guide to clinical interventions for service users- the word "assessments" is very general, would it be clearer to say information gathered from service users during assessment sessions? Q 8. Effectiveness of treatment interventions for service users might be clearer Q18. Suggested change to staff in the service

	Q19. Suggested change to clinical supervisors or clinical line managers in the service Q29 Suggested change to staff in the service Q41. Suggested change to mangers(clinical /administrative in the service Q75. Suggested change to staff in the service Q76 Question seems very broad- suggestion effectiveness in service users meeting their goals or improved treatment outcomes Q87. Service needs- suggested change- would it be meeting service users goals or maybe improve service delivery Q120 suggested change- how often do staff in the your service bring new interventions or techniques they have learned in training back to other members of staff in the service **Service User Engagement Questionnaire:** Q4. Suggested change- Your counsellor or keyworker expects you to learn responsibility self-discipline Q12. Suggested change- leave out word service just "your treatment goals"
6	None
7	None
8	Q2: "When required, this service is good at……." "This removes any ambiguity in relation to this question"
9*	Drug Tx Info No detoxification, you may want to specify what difference between inpatient treatment (I suspect detox?) and residential rehabilitation. What could 'other structured tx' be? And then other? I would just leave the other. In the qualifications section I wonder is it worth capturing peers who have gone through system and are working in tx services with no formal education? Discipline question surely 'none and student' are two potential answers I would separate?

	SU Qn You talk about goals and progress. But do not ask about 'I have a care plan, 'my care plan is made up of clear achievable goals", "my care plan is regularly reviewed (NB how often), 'once goals are reached we make new ones", 'all of the relevant agencies are included in my care plan", etc. You later use care planning language with staff, I suggest you are more explicit. Quantify, ask about review process and other key partners for delivery. Staff Qn I am sure you have a rationale but a small number of the staff questionnaire items seem quite specific? 'Improving the cognitive focus of SU'? No prompts or guidance on what this entails? you ask about training for 'computerised assessment' are you referring to electronic record systems? If so say this. It sounds like you are referring to psychometric testing with current language? The overall feel of the staff questionnaire is scattered. It would benefit from sections, ie. Supports, pressures, IT, tx approaches/process paperwork etc
10*	In relations to the 11questions my main comment is that issues like detoxification, residential treatment, aftercare are current issues with service users. The other issue is alcohol. I hope this helps but I am not sure what you are after and whether what I sent from Catherine Dsrker is of help.
11*	I have taken a look at the two attachments. Initial thoughts on both questionnaires: For both – the layout and presentation needs work. Have they been piloted for ease of use and understandability? Staff – there are a lot of questions – could these be reduced to the questions that map onto the core research questions? Where did the questions come from? A validated instrument or are these developed by the PhD student? If so what process was used? Service user –how will this questionnaire be administered? If self-completed by a service user how will literacy levels be taken into account? If administered by a staff member, how will bias be addressed? Or will it be administered by the student themselves?

	There was a second attachment with only one page but it listed questions on it that were numbered 123-133. I would recommend that the student does not attempt to administer any type of a questionnaire that has such a high number of questions. This introduces fatigue into the respondents and it reduces the integrity of their responses. What will the sequence be for the focus groups and the questionnaires? Which will come first? This is an important consideration for priming respondents, as the sequence can create a bias.