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Title	Self-leadership strategies and psychosocial outcomes among advanced nurse practitioners in Ireland
Authors	Duignan, Martin
Publication date	2022-05-25
Original Citation	Duignan, M. 2022. Self-leadership strategies and psychosocial outcomes among advanced nurse practitioners in Ireland. PhD Thesis, University College Cork.
Type of publication	Doctoral thesis
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Download date	2026-11-06 19:56:30
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Self-leadership strategies and psychosocial outcomes among advanced nurse practitioners in Ireland

Thesis presented by

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for the degree of

Doctor of Nursing

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Year of submission of thesis: 2022

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Glossary of Terms

The following definitions apply and serve as the context for understanding the terms used in this research study:

Advanced Nurse Practitioner is a generalist or specialised nurse who has acquired, through additional graduate education (minimum of a master's degree), the expert knowledge base, complex decision-making skills and clinical competencies for advanced nursing practice, the characteristics of which are shaped by the context in which they are credentialed to practice (Schober *et al.,* 2020:6).

Clinical Leadership is the concept of clinical healthcare staff undertaking the roles of leadership: setting, inspiring and promoting values and vision, and using their clinical experience and skills to ensure the needs of the patient are the central focus to the organisation's aims and delivery (Jonas *et al.*, 2011: 1)

Self-Leadership is the "practice of intentionally influencing your thinking, feeling and actions towards your objective/s" (Bryant and Kazan 2013)

Commitment to the workplace refers to the degree to which employees are committed to the organisation rather than to the work itself (Burr *et al.*, 2019)

Work engagement is concerned with how attached an employee feels about a task independently of how they experience their workplace (Burr *et al.*, 2019)

Influence at work is the degree to which employees can influence different aspects of their work such as the ordering of tasks or the planning of the work itself (Burr *et al.*, 2019)

Job satisfaction is "an affective (that is, emotional) reaction to one's job, resulting from the incumbent's comparison of actual outcomes with those that are desired (expected, deserved, and so on" (Cranny *et al.* 1982:1).

Intention to leave refers to an employees' perceived likelihood to leave the organisation or profession shortly (Bigliardi *et al.,*, 2005)

List of Abbreviations

AMOS	Analysis of Moment Structures
ANOVA	Analysis of variance
ANA	American Nurses Association
ANP	Advanced Nurse Practitioner
AP	Advanced Practitioner
BFS	Behaviour Focused Strategies
CFA	Confirmatory factor analysis
CFI	Comparative fit index
CHO	Community Healthcare Organisation
COPSOQ	Copenhagen Psychosocial Questionnaire
CPD	Continuing Professional Development
CTPS	Constructive thought-focused strategies
DNP	Doctor of Nursing Programme
EFA	Exploratory factor analysis
HSE	Health Service Executive
IAANMP	The Irish Association of Advanced Nurse and Midwife Practitioners
KMO	Kaiser-Meyer-Olkin
M	Mean
MCAR	Missing completely at random
NCNM	National Council for the Professional Development of Nursing and Midwifery
NMBI	Nursing and Midwifery Board of Ireland
NRS	Natural Reward Strategies
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RMSEA	Root mean square error of approximation
RSLQ	Revised Self-Leadership Questionnaire
RSLQ	Revised Self-Leadership Questionnaire
SD	Standard Deviation
SPSS	Statistical Package for the Social Sciences
SREC	The Social Research Ethics Committee
TDM	Total Design Method
TLI	Tucker-Lewis index
UCC	University College Cork
VIF	Variance inflation factor
WGAP	Working Group Advanced Practice

Declaration

This is to certify that the work I am submitting is my own and has not been submitted for another degree, either at University College Cork or elsewhere. All external references and sources are clearly acknowledged and identified within the contents. I have read and understood the regulations of University College Cork concerning plagiarism and intellectual property

Signed: _____

Student Number: 116224487

Date: 23rd May 2022

Abstract

Aim

The aim of this study was to investigate the relationship between Advanced Nurse Practitioners' Self-Leadership and Commitment to the Workplace, Work Engagement, Influence at Work, Job Satisfaction, and Intention to Leave

Background

The concept of self-leadership is particularly suited to ANPs who are required to take responsibility for their own work roles. An optimum balance between the ANPs' psychosocial work environment and self-leadership may positively impact work ability in this group and can be compromised by interactions between and among these variables.

Design

A cross-sectional correlational study was conducted from July 2020 to August 2020 on a sample of 153 ANPs across one national health service.

Methods

Between July and August 2020, the survey was distributed online by the Health Service Executive (HSE) and the Irish Association of AdvancFaed Nurse and Midwife Practitioners (IAANMP). The revised self-leadership questionnaire was used to measures self-leadership; three scales from the Copenhagen Psychosocial Questionnaire was used to measure commitment to the workplace, work engagement and influence at work; single-item measures were used to measure job satisfaction and intention to leave. Multiple linear regression models were used to examine the associations of self-leadership and the psychosocial variables.

Results

ANPs with high levels of self-leadership also reported high levels of work engagement (B = 0.17, 95% CI [.011. 0.22], p <0.001). Significant relationships between levels of self-leadership and commitment to the workplace (r = .495, p <.01, n = 153) and intention to leave were also found. The relationships between self-leadership and influence at work and job satisfaction were, however, not statistically significant.

Conclusion

Improving self-leadership among ANPs by involving them in strategic leadership activities at an organisational level could be an effective strategy for optimising the role and facilitating ANPs to contribute at an organisational level beyond the clinical interface. However, organisational support and role flexibility are required to ensure ANPs practice to the full potential of their training and capability.

Chapter 1: Context Chapter

1.1. Introduction

This chapter provides an introduction to the impetus, context, underpinning rationale, and background justification for undertaking a study exploring leadership and, in particular, self-leadership, among Advanced Nurse Practitioners (ANPs). The various levels of leadership at which ANPs operate, leading self, leading others and leading at an organisational level will be discussed. Owing to the complexity of the ANP leadership role, the literature from nursing and wider organisational leadership is incorporated into the chapter to provide a fuller exploration of phenomena of leadership enactment among ANPs in practice.

1.2. Development of Advanced Practice Roles

ANP posts were introduced into healthcare systems in the US in the 1960s and in the UK from the early 1980s. Originally introduced to manage an increasing patient demand for care in a more expedient manner (Woolwich, 1992), the evolution of ANP posts has occurred in response to a number of factors, including: a changing healthcare landscape in terms of changing demographics (Bryant-Lukosius *et al.,* 2017; Fox *et al.,* 2018), the availability of higher levels of education (Fealy *et al.*, 2018), a reduction in doctors working hours (Anderson, 2018; Egerod *et al.,* 2021), and an expansion of the role of nurses and midwives (Coyne *et al.,* 2016; Lopes-Júnior, 2021).

In Ireland, the findings from the influential *Report of the Commission on Nursing: A Blueprint for the Future* (Government of Ireland, 1998) served as a catalyst for clinical career pathways for nurses and midwives from clinical nurse specialist to advanced nurse practitioner grades. As a consequence of this report, the National Council for the Professional Development of Nursing and Midwifery (NCNM) was established and set out a series of frameworks which guided the establishment and progression of advanced practice in Ireland (National Council for the Professional Development of Nursing and Midwifery, 2010, 2008a, 2008b, 2005a, 2005b,

2004, 2003, 2003, 2001). The NCNM framework for the accreditation of ANP posts set out the core competencies of advanced nurse practitioners which included: autonomy in clinical practice, expert practice, professional and clinical leadership and research (NCNM, 2008a). Following dissolution of the NCNM in 2010, its functions related to advanced practice nursing were transferred to the Nursing and Midwifery Board of Ireland (NMBI) and placed on a statutory footing.

The NMBI (2019) define advanced nurse practitioners as: "registered nurses … who engage in continuing professional development (CPD) and clinical supervision to practice as expert practitioners and demonstrate exemplary clinical leadership". The Policy on the development of Graduate to Advanced Nursing and Midwifery (Department of Health, 2019) sets out the criteria that ANPs must meet including: attainment of a Master of Science in Nursing (Advanced Practice Nursing) or completion of a collection of courses which, when combined, meet the Advanced Practice Nursing Standards and Requirements (NMBI, 2017) and have a minimum of two years in the speciality of practice.

1.3. The Advanced Nurse Practitioner Role

Internationally, countries are at various stages of introducing advanced practice roles, which has resulted in high variability of regulatory systems of nurses practicing at ANP level, the level of academic award required to practice at this level and nomenclature for those in such posts (Carney, 2016; Lamb *et al.,* 2018; Leary *et al.,* 2017; Heale and Rieck Buckley, 2015). This, it has been argued, has contributed to role obfuscation, impeded the measurement of ANP's contribution to care delivery and created confusion around professional boundaries both in Ireland (Mc Conkey and Hahessy, 2018) and internationally (Weiland *et al.,* 2010; Baldwin *et al.,* 2013; Bryant-Lukosius *et al.,* 2017). In part, this confusion may be caused by the plethora of and variance among advanced practice roles internationally. For example, ANPs in Australia are comparable to their Irish colleagues insofar as they are both educated to Master's level, with highly developed knowledge and advanced skills in a specific area of practice. ANPs in both jurisdictions also practice as autonomous practitioners (Dwyer *et al.,* 2021; MacLellan *et al.,* 2016). In contrast, in the UK there is no registration process for ANPs, and while there is an expectation that ANPs will have a master's degree (King *et al.,* 2017; Laird *et al.,* 2020), it is not mandated. Moreover, there are inconsistencies in the registration

processes for those practicing in advanced practice roles internationally (Carney 2016). As an exemplar, and in contrast to countries such as Ireland (Carney, 2016) and Canada (Parker and Hill, 2017), the title of ANP remained unprotected in the UK with respect to legal status (King *et al.,* 2017). A study by Heale and Rieck Buckley, (2015) has identified 52 different ANP roles in 26 countries and it is this significant variance which makes completing comparative studies of ANP practice difficult.

In Ireland, ANP posts have been regulated since their introduction. In the two decades advanced practice roles from a regulatory perspective, developed in a relatively homogeneous fashion using the systematic guidance provided by the NCNM (NCNM, 2008a, 2008b), and more recently by the policy on the development of graduate to advanced nursing and midwifery practice
. For the purposes of this thesis the term ANP shall refer to:

> A generalist or specialised nurse who has acquired, through additional graduate education (minimum of a master's degree), the expert knowledge base, complex decision-making skills and clinical competencies for advanced nursing practice, the characteristics of which are shaped by the context in which they are credentialed to practice (Schober *et al.,* 2020:6).

1.4. Influence of the Commission on Nursing

The establishment of the ANP role in Ireland was a direct consequence of the recommendations of the Commission on Nursing published in 1998 (Government of Ireland, 1998). The Commission had been convened in March 1997 and its terms of reference included examining the roles of nurses and midwives, career advancement opportunities and the training and educational needs of nurses. Its recommendations served as the catalyst for widespread changes in nursing structures, pre-registration education and advanced practice roles in Ireland.

With respect to advanced practice, the Commission on Nursing (Government of Ireland, 1998) conceived the emergence of advanced nursing practice roles across a diverse range of clinical areas with the aim of enhancing services. The enhancement of community psychiatric services, for example, through appointment of ANPs in every catchment area was recommended.

Similarly ANP developments in intellectual disability nursing, older person's care and within the community public health nursing system was also recommended. This focus on the community to date remains unfilled and indeed the Department of Health, (2017: p11) have highlighted the limited development of advanced nursing and midwifery roles in the community in Ireland. The Commission's view of ANPs dispersed across the various disciplines and areas of nursing was demonstrated in its advocation of a broad based clinical pathway to advanced practice. In articulating this view the Commission stated that, "advanced practice nursing is as important in care of the elderly as it is in critical care nursing" (Government of Ireland 1998: 69).

The reality, however, is that rather than the envisioned equal geographic and specialist distribution of developing ANP posts, such posts have developed largely in an *ad hoc* fashion in response to local need with a bias toward practice areas such as medical, surgical and emergency nursing (Department of Health, 2017). The Commission was firm in its assertion that ANP posts should be developed in response to future service needs. However, in actuality these needs were determined locally rather than strategically which has resulted in an inconsistent provision across geographical and specialist areas (Department of Health, 2017). To illustrate this point, the NMBI Working Group Advanced Practice (WGAP) interim draft report (2014) revealed that of the 140 ANPs in post in October 2014, 116 were registered on the general register, 8 ANPs were registered on the children's division, there was 1 ANP on the intellectual disability division, 13 on the psychiatric division and 2 on the public health division. It may therefore be concluded that ANP capacity two decades on from the Commission on Nursing had not yet fully materialised in comparison to the aspirations and recommendations highlighted in the report.

1.5. Integration of Advanced Nursing Practice Across Clinical Settings

A number of challenges within the Irish health service were instrumental in developing advanced practice roles. In a paper exploring clinical governance in the Irish health system, McAuliffe, (2014) asserts that successive governments have over-focused on managing waiting times and diagnostics in acute services as these areas receive scrutiny from media outlets. This approach may have incentivised emergency departments (EDs) to develop the ANP role disproportionally to other clinical areas as ED crowding is recognised globally as a

major challenge to healthcare provision (Freibott, 2017; Gaughan *et al.,* 2019). Hospital crowding is a phenomenon which continues to exist in Irish healthcare (Cummins *et al*, 2022; Houses of the Oireachtas, 2017; Kavanagh *et al*, 2017; Mustafa *et al*, 2016) despite having been previously described over a decade ago as reaching crisis proportions (Coughlan and Corry, 2007) and as a national emergency (Finnegan and MacCarron, 2000). Such crowded hospital environments represent a major policy concern internationally as crowding negatively influences a range of healthcare delivery metrics and outcomes such as morbidity and mortality (Beckerleg *et al.,* 2019; Rasouli *et al.,* 2019), the delivery of timely care, and patient safety (Carlson, 2016). As ANPs contribute to the delivery of timely and effective patient care (Dawood and Gamston, 2019), hospital crowding may have contributed to the disproportional number of ANPs in EDs compared to other settings, with half of ANPs on the NMBI General Nursing Register in 2014 falling under the governance of emergency settings (Table 1) (Department of Health, 2019)

. Still others who operate under the governance structures of cardiology and medicine, are also based in emergency departments where they provide emergent care to meet the specific service delivery requirement of addressing ED crowding. This focus on the development of ANPs in emergency care has led to other areas such as primary care, midwifery, mental health and intellectual disability not being developed in a consistent or strategically planned way.

Table **1:** ANP area of practice on the General Register (n=151)

Number	Area of Practice
83	Emergency Department
13	Cardiology/ cardiothoracic
10	Neonatology
7	Oncology/ radiation oncology
6	Diabetes
4	In each of Older persons and Palliative Care
3	Rheumatology
2	In each of Primary care, Pain management, Epilepsy, Breast care, Haematology, Women's health. Heart failure
1	In each of Sexual health, Ophthalmology, Vascular, stroke, Urology, Occupational health, Gastroenterology

Note: ANPs on the Advanced Practice Register 2014. Source: (Working Group Advanced Practice (WGAP), 2014)

Such inconsistency in the development of ANP posts, and the fact that only 0.2% of the nursing and midwifery population were registered at advanced level in 2016 (Department of Health, 2017), created an impetus for the increased utilisation of the nursing and midwifery workforce by changing the way nurses and midwives are educated from graduate to advanced level. This has resulted in the formation of a *Graduate Policy on Advanced Nursing and Midwifery Practice* (Department of Health, 2019). The implementation of the recommendations in this report has resulted in the creation of over 120 additional candidate ANP and registered ANP posts in chronic disease management (rheumatology and respiratory medicine), older person's care and unscheduled care (Brady and Drennan, 2020). While it has resulted in increasing numbers of ANPs, the development of ANPs in areas such as public health and learning disability nursing remain relatively low. This uncoordinated approach has led to a number of problems including the micro-specialisation of ANPs, a small number of ANPs relative to the overall nursing workforce and an uneven geographical spread of existing ANPs across the hospital and Community Healthcare Organisation (CHO*)* networks (Department of Health, 2017). Such issues have also arisen internationally (Bryant-Lukosius *et al.,* 2017; Davis *et al.,* 2018; Maier *et al.,* 2016), where role integration continues to pose significant challenges (Fox *et al.,* 2018; Lowe *et al*, 2018; Torrens *et al.,* 2020). Similar to Ireland, Edwards *et al.,* (2011) found, through a whole system analysis informed by literature and policy documents, that it

took decades to establish a critical mass of ANPs in the Canadian healthcare system despite the effectiveness of the role being established following their introduction. Likewise in Australia, Woods and Murfet, (2015: 1) assert that the ANP role "remains under-recognised and underutilised", with low numbers of authorised nurse practitioners and slow integration into the healthcare system. The study highlighted a number of impediments to ANP integration including reimbursement difficulties in the absence of a direct remuneration model for ANP services. While there seems to be a consensus that ANPs are poorly integrated, there is a dearth of evidence which guides policy makers to measure role integration. Bryant-Lukosius and Martin-Misener (2015) suggest using the ratio of numbers of advanced nurse practitioners to the number of registered nurses as a crude measure of role integration. Using this measure, Canadian ANPs at 0.6% of the total Registered Nurse workforce (Canadian Institute for Health Information, 2010), Ireland's ANPs representing 0.2% of the total nursing workforce (Department of Health, 2017), and many countries such as the UK having no accurate number of nurses practicing in advanced roles available (Baileff, 2015; Brook and Rushforth, 2011) suggests low integration and a potential untapped resource of nursing talent.

1.6. Policy Developments and Advanced Nursing Practice

Internationally, there is an increased recognition of the potential and opportunity for ANPs to influence global health through healthcare delivery and prevention of ill-health. For example, the All-Party Parliamentary Group on Global Health published the Triple Impact report in 2016 which recommends cooperation between national and global agencies including the European Union, and the World Health Organization to position nursing to improve health, promote gender equality and support economic growth (All-Party Parliamentary Group on Global Health, 2016; Crisp, 2018; Wood, 2018). In relation to ANPs, the report recognises that this cohort are leading and developing services across a diverse range of settings. Elsewhere, there is a recognition that ANPs have an essential role to play in addressing the challenges of sustaining a global health workforce, improving health outcomes and inequalities and achieving universal health coverage (Bryant-Lukosius *et al.,*2017; Global Health Workforce Alliance, 2015). There is also a recognition of the potential of ANPs to contribute to policy efforts and advance clinical research to achieve the United Nations' Sustainable Development Goals (Christmals *et al*., 2019; Nelson *et al*., 2019; Rosa *et al*, 2020). However, despite policy recognition of the potential of ANPs, restrictions to ANP practice persist (Feyereisen and

Goodrick, 2021; Perloff *et al.,*2019). According to Pasarón, (2013) constraints placed on ANP practice have been shown to reduce ANP outcomes such as job satisfaction.

The evolution of the ANP role at a policy level is also evident in Ireland. The genesis of advanced practice roles in Ireland occurred in an era where health services were focused on secondary care and treatment. In the intervening two decades, healthcare in Ireland has been transitioning to a population health based model with an emphasis on primary care and prevention through a policy named as Sláintecare (Houses of the Oireachtas, 2017). Although there is recognition that progress toward achieving the entire plan has been limited (Keegan *et al*, 2021; Thomas *et al*, 2021), population health has become a fundamental element of Irish health policy; due in part to increasing life expectancy and the endemic increase in non-communicable diseases. This evolution is reflected in ANP posts which were at their inception designed for specific areas which led to micro-specialisation and narrow silos of expertise. Increasingly they are signs of the role evolving to address current societal and health challenges, in particular patients with long term conditions (Brady and Drennan, 2020) and a shift to broad-based master's level education rather than the specialist programmes (Department of Health, 2019).

In wider healthcare policy, there is also a recognition that increased health spending is needed in preventative and primary care to address the growth in people with chronic illness (Wang, 2018). Sequential Irish policy documents detail attempts to reorientate the Irish health system toward primary and social care where possible with an emphasis on prevention and public health (Department of Health, 2012; Department of Health and Children, 2001; Houses of the Oireachtas, 2017).

Contemporary healthcare requires adaptive, collaborative, and systems' oriented clinicians who are adept at practicing within complex environments (Widmer *et al.,* 2018). Heretofore in Ireland, many ANPs practiced in tightly defined specialisms with extensive specialist knowledge in particular speciality areas such as 'minor injuries', 'chest pain' or 'rapid assessment' or roles based on diagnostic patient groupings such as 'diabetes' or 'rheumatology' where practice is underpinned by a biomedical approach of cure/treatment which tends to be reductionist (Johannessen, 2009) and is ill suited to present-day advanced nursing practice (Dillard-Wright and Shields-Haas 2021). Likewise, the Commission on Nursing recommendation that each ANP should be matched with a specific post within the

health service may have restricted the development of ANP services and resulted in a very local focus, rather than a service level orientation. This reductionist focus has led to some concern regarding the sustainability of the ANP role (Fox *et al.,* 2018; Ruiz, 2018). Arguably therefore, while recent policy changes (Department of Health, 2019) have reconceptualised the role with a greater emphasis on preventative healthcare, there is a need to maintain this evolution and avoid the reductionism and instrumentalization that heretofore has led to micro-specialisation and an unbalanced focus on the direct patient care of the role (Casey and O' Connor, 2021; Ryder *et al.*, 2022).

1.7. Academic and Clinical Preparation of ANPs

In Ireland, nurses who have a minimum of two years post-registration clinical experience may register as an ANP by completing one of two pathways (Department of Health, 2017; NMBI, 2017). The first pathway requires applicants to have completed an approved MSc in Advanced Practice Nursing programme. Each of these programmes satisfy the NMBI revised standards and requirements to prepare ANPs for advanced clinical activities including:

- Nurse medicinal and ionising radiation prescribing
- Advanced assessment, diagnosis and referral
- Diagnostic reasoning and decision making
- Case management
- Leadership
- Research

The second option is a developmental pathway. This pathway requires nurses to be registered with the NMBI, be registered on the NMBI prescribers division, hold an MSc Nursing or an MSc which is relevant, or applicable to the intended field of practice. Additionally, a clinical practicum and evidence of validated competencies relevant to the area of intended practice are required.

1.8. The Advanced Practice Role

A considerable body of early research has focused on the ability of ANPs to expand into and absorb some of the medical role, in effect to substitute for doctors. A number of early randomised controlled trials sought to compare nurse practitioner delivered care to that of doctors in a range of clinical settings such as outpatients (Sharples *et al.,* 2002), pre-admission clinics (Stables *et al.*, 2004), EDs (Cooper *et al.,* 2002), and primary care (Dierick-van Daele *et al.,* 2009; Kinnersley *et al.,* 2000). There is conflicting evidence in studies comparing nurse practitioner delivered care to that of doctors with some scholars concluding that both groups provided comparable care with no statistical difference in patients' health status, medical resource consumption or in practitioners' compliance with using clinical guidelines (Dierick-van Daele *et al.*, 2009; Smigorowsky *et al.*, 2019). In contrast, Sharples *et al.*, (2002) found that ANPs delivered care resulted in longer consultation times and increased resource use. Three studies found that patients reported greater satisfaction with ANP delivered care compared to physicians in a variety of clinical setting (Cooper *et al.*, 2002; Kinnersley *et al.*, 2000; Stables *et al.*, 2004), and that ANP clinical documentation was of a higher quality to that of their medical colleagues (Cooper *et al.,* 2002). Two of the RCTs also found that ANPs provided more information to patients when compared to physicians (Cooper *et al.,* 2002; Kinnersley *et al.,* 2000). However, it is of note that the variability in the quality of studies as well as differences in context, sampling and research methods has made comparing the effectiveness of the ANP role with traditional care difficult (Donald *et al.,* 2013; Martin-Misener *et al.,* 2015; McCleery *et al.,* 2011; Stanik-Hutt *et al.,* 2013; Woo *et al.,* 2017). This may be viewed as a limitation of such studies as they are often subsequently cited to support the view that ANPs are providing comparable or superior care to physicians (McCleery *et al.,* 2011).

While links with medicine are important however, it has been highlighted that ANP led care must have a separate identity which highlights the added value that ANPs contribute to the healthcare system and allows for role optimisation (Delvin *et al.*, 2018; Thompson and McNamara, 2021). Moreover, the literature has demonstrated that the service provided by ANPs is safe and broadly acceptable to stakeholders, doctors, patients and other nurses and that

the involvement of ANPs in healthcare systems improves a range of patient, staff and organisational outcomes (Aiken *et al.,* 2021; Dwyer *et al.,* 2021).

1.9. Positionality within the healthcare team

The positionality of the ANP within the interdisciplinary team is a recurring theme of the literature examining the ANP role. In a qualitative study exploring advanced practice models, O'Connor *et al.,* (2018) interviewed 15 stakeholders from clinical, policy and multi-disciplinary areas. The study highlighted that ANPs are often the co-ordinator of a patient's care acting as a key contact to other members of the multi-disciplinary team. Similarly, Higgins *et al.,* (2018), who utilised a case study methodology to explore the leadership activities of nurses (ANPs and CNSs) working in epilepsy care, found that these nurses were the initiators of collaboration with other healthcare practitioners which resulted in enhanced care for patients and reduced care burden on families. The involvement of ANPs in patients care providing a consistent point of contact for the interprofessional team was also found by David *et al.,* (2015) in their study which utilised a retrospective comparative design to evaluate the outcomes of acute cardiology patients. The patients received care from a medical team which included a cardiac acute care ANP or a medical team without an ANP. The study found that being cared for by a team which included an ANP resulted in 50% lower readmission rates and lower rates of emergency department review. In support, Lutze *et al.,* (2018) and Anderson, (2018) found that nurse practitioners acted as clinical leaders providing support, mentoring and guidance to other clinicians. Relating to a specific role as a clinical nurse leader (i.e., a master's prepared nurse who is an expert in a certain field and is responsible for creating excellent quality of care, as well as enhancing safety), both Wesolowski *et al.,* (2014) and Bender *et al.,* (2017) found that clinical leaders are involved in opening and maintaining communication between disparate groups and in doing so improving care processes. It has been highlighted by Lutze *et al.,* (2018) and Casey and O' Connor, (2021), however, that these leadership activities which ANPs engage in are largely invisible at the clinical and organisational level and are not captured by studies and systematic reviews evaluating the role. An evaluation examining the impact of ANPs on service challenges by Brady and Drennan, (2020) found that more than two-thirds of candidate and registered ANPs were satisfied with their organisational position, which is in contrast to studies by Fox *et al.,* (2018) and Yuill, (2018) who found that ANPs felt isolated in clinical practice and did not feel supported by their managers.

Despite the findings that highlight variability in the position of ANPs in the interdisciplinary team, policy makers appear to recognise that ANPs contribute to high quality care (Begley *et al.,* 2014). Indeed, the delivery of high quality cost effective healthcare prompted the development of nurse practitioner services internationally (Jennings *et al.,* 2009; Lee and Fitzgerald, 2008), and there is increasing recognition from research findings of the contribution of ANPs in improving quality of care and health outcomes (Martin-Misener *et al.,* 2015; Swan *et al.,* 2015).

1.10. Professional Identity of ANPs

The task of establishing an ANP's professional identity is made more difficult as the ANP roles and level of practice overlaps with the skills and knowledge of medicine, a profession which Delvin *et al.,* (2018) and Guillaumie *et al.,* (2020) argue are at the top of the hierarchy in most healthcare systems. These authors argue, however, that where ANPs cannot establish role clarity and professional identity, a vacuum is created which allows room for physicians, healthcare managers and other healthcare providers to disproportionately dictate the scope of advanced nursing practice.

Advanced nursing practice has been identified as a key solution to address the increasing global healthcare demands and providing healthcare services that enhance care (Nadaf, 2018), and identified as a key healthcare group capable of being responsive to the challenges of evolving healthcare needs (Bovero *et al.,* 2018). In a paper which reports on findings exploring professional identity within health and social care professionals, Joynes, (2018) cautions that educational or academic definitions of professional identity do not always align with the reality of what professionals do and how they practice. It is appropriate to explore whether ANP practice in Ireland aligns with the educational or academic definitions of advanced practice or whether they are being drawn toward a reductionist and instrumentalist system that is not consistent with the values or concept of professional identity (Carryer and Adams 2021), and is more concerned with palliating the shortage of medical doctors and addressing unmet healthcare demands.

The increasing specialisation of healthcare staff, the desire for greater efficiency and increasing workloads has decreased the face-to-face time that healthcare staff spend with patients (Pelak *et al.,* 2015; Drossman *et al.,* 2021; Michel *et al.,* 2021). Reductionism, which

reduces a system to its component parts and addresses each piece as a defined entity, is, it has been argued, the prevailing paradigm within contemporary healthcare (Holst, 2020a; Widmer *et al.,* 2018). The basic premise of biomedical reductionism is the breaking down (or "reducing") the patient as "an object to be diagnosed" (Holmes *et al.,* 2011:108), without consideration of the political, social and economic context and requirements (Holst, 2020a). Bentley *et al.*, (2016) and Ryckeghem *et al.,* (2017) argue that ANPs strive to deliver care in a non-reductionist way which considers the dynamical interactions between the biological, psychological and social factors affecting their patients. In addition, Casey *et al.,* (2017) warn that a behaviourist reductionist approach in nursing competency development may focus on clinical tasks rather than role expansion embedded in the values and functions of nursing and midwifery. Schmidt and Diestel, (2015) assert that the high workloads, which exist in clinical practice, necessitate that clinicians, including ANPs, constantly resist the temptation of biomedical reductionism which can be useful in achieving task-related goals.

More broadly, there is some concern that reductionist approaches in healthcare result in care episodes that do not contribute to population health or reduce health inequalities (Carryer and Adams, 2017; Widmer *et al.,* 2018). Holism, which advocates non-linear approaches to care (Riley *et al.,*2016), is frequently espoused as an attribute of ANP care (Anderson, 2018; Carryer and Adams, 2021; Cowley *et al.,* 2016; Coyne *et al.,* 2016; Hummel *et al.,* 2017); however, it has been argued that reductionism permeates medical sciences influencing the way that diseases are diagnosed, treated and prevented (Holst, 2020a). Furthermore, reductionist approaches in healthcare are regarded as negative (Greene and Loscalzo, 2017; Kaiser, 2011; Widmer *et al.,* 2018) with this approach ill-suited to dynamic healthcare systems (Donnellon *et al.,* 2013; Holst, 2020b). There may be a perception, however, that, rather than reflecting holism by delivering healthcare in a nonlinear approach, ANP led care has been subjugated to providing simple solutions to patients with low acuity needs (Fox *et al.,* 2018; Plath *et al.,* 2019); this leads to a system where patients are reduced to a biomedical diagnosis such as 'minor injuries'. This reductionist approach inhabits a disparate sphere to the clinical leadership activities of ANPs including policy developments and the less well-defined aspects of role development which contribute to improving patient outcomes (Taylor and Martindale, 2013).

Instrumentalism is a branch of philosophy which believes that scientific laws and theories can be used to predict phenomena (Mashaba and Brink, 1994). Such a stance forwards that as such laws and theories cannot be proved as true or false, they must be judged on their usefulness

(Lacey, 1993) and as such is closely related to pragmatism (Galina, 2016). Sedgwick, (2013) argues that there is an increasing tendency toward instrumentalism in healthcare. It has been posited that nursing practice is becoming increasingly instrumental (Sellman, 2008) with nurses having to work harder to hold onto the caring and human aspects of nursing which are fundamental to their role. It has been further argued that there are competing pressures between practicing within the values of nursing and the increasing instrumental nature of organisations which focus on achieving targets in terms of activity and throughput (Sellman, 2011). Despite the stated shortcomings of reductionism, complex economic and social forces shaping healthcare practice result in reductionist thinking where ANPs may be viewed as merely instruments whose usefulness as tools (instruments) is measured by how they contribute to reducing hospital crowding or managing waiting lists in other clinical areas. Indeed, research around nurse practitioners tends to be dominated by instrumental and economic discourses which explore the clinical activities associated with the role (Rashotte, 2014) rather than exploring advanced practice as a comprehensive approach to provision of healthcare services that enhance care.

It may be argued therefore that while there is a cogent vision of ANP professional identity at a policy level and an appreciation of the potential of the group to meet and address global health concern, the demands of the clinical environment may result in a prioritisation of the clinical role and a resulting loss of synergy with the other domains of advanced practice such as leadership.

1.11. Policy Aspirations versus conceptualisation in practice

The conceptual shift toward a health system orientated toward population health, healthcare spending which fell during the economic crash (Nolan *et al.,* 2014) and the failure of ANP integration into the wider healthcare team has led to an emerging consensus that significant reform is required (Department of Health, 2017, Ryder and Gallagher 2022). There is a recognised requirement for a revised model to integrate advanced nurse practice into the Irish healthcare system to address current need, and position advanced practice to maintain its contribution in an arena of changing health delivery (Casey *et al.*, 2017; O'Connor *et al.*, 2018). This has the potential to assist in narrowing the gap between national and professional policy

aspirations and current ANP practice where ANPs practice largely at a local level. However, Schroeder, (2016) warns there is a need to be cognizant of the potential disconnect between policy makers and those who seek to implement new nursing roles or levels of practice at a local level. In support, Officer *et al.,* (2019) in a realist study which sought to examine how advanced practice roles developed in New Zealand, found mis-alignment between the policy intentions and the reality of advanced practitioner roles. Moreover, the study found a discrepancy between the policy aspirations of the impact of advanced practice roles on the delivery of health services and the measurable impact. Recognising the unique contributions of advanced nurse and midwife practitioners to healthcare (Department of Health, 2017; O'Connor *et al.*, 2018), the Department of Health in Ireland has adopted a workforce strategy which is a key articulation of the current administration's plans for healthcare reform. The strategy sets out an ambitious target to increase the proportion of nurses and midwives practicing at advanced practice level from 0.2% to 2% of the overall nursing workforce or approximately 700 posts by 2021. At the time of this study's data collection [July 2020] there were 453 ANPs and 12 Advanced midwife practitioners on the NMBI advanced practice register (Appendix 1). As the number of ANPs continue to increase [increased to 640 by February 2022], there is a need to ensure that there remains an emphasis on the provision of advanced nursing practice that enhances care, and that the professional identity of ANPs conceptualised in practice is aligned with the policy aspirations rather than been drawn toward a system that is inconsistent with nursing professional values.

1.12. Practicing in the Third Space

The ANP role undoubtedly has developed across existing professional boundaries with ANPs now working in a space traditionally undertaken by junior doctors (McDonnell *et al.,* 2015; Raleigh and Allan, 2017). ANP role boundaries have become more fluid as they adapt to the changing healthcare environment and they are encouraged to practice at the fullest extent of their professional role (Kennedy *et al.,* 2015; Kilpatrick *et al.,* 2012; Raleigh and Allan, 2017). While advanced practice and the subsequent blurring of professional boundaries has facilitated ANPs to deliver more patient centred care (Kennedy *et al.,* 2015) and contribute to service reform (Fox *et al.,* 2018), there has always been some concern that nurses transitioning to the ANP role struggle for professional recognition as they negotiate an occupational position

(McMurray, 2011; Thompson and McNamara, 2021) and even mimic the role of our medical colleagues while losing the essence of nursing. One challenge for ANPs has been to practice within a system that is consistent with a nursing identity. ANPs have sought to expand their role, which involves gaining competency while encompassing additional skills and areas of practice to meet patients' needs while preserving and remaining within the nursing profession. Role extension on the other hand is where nurses achieve certification for taking on new tasks. It is distinct from role expansion which is viewed as more holistic, patient centred and consistent with nursing and midwifery values (Health Service Executive, 2011; NMBI, 2015).

This 'mini doctor–maxi nurse' debate was prevalent in the United Kingdom in the decades following the introduction of the role (Brook and Crouch, 2004; Castledine, 1995; Cowley *et al.,* 2016; Mathieson, 1996) and continues to the current era (Barratt, 2022; Carryer and Adams, 2021; Nadaf, 2018). Indeed, Woods and Murfet, (2015) in their critical reflection inquiry of ANP roles describe ANPs as practicing in the medical domain, but with a nursing foundation. Nonetheless, the concept of flexible workforce with a more responsive and adaptive scope of practice is gaining momentum not only among ANPs but also among other healthcare disciplines (Leary *et al.,*2017; Snaith *et al.,* 2018; Thompson *et al.,* 2014) . Indeed a study by Leary *et al.*, (2017) which mined an existing dataset of nurses working in specialisms in the UK revealed that 595 different advanced practice titles were being utilised by a wide variety of healthcare staff. Leary and colleagues found a wide variety of labelling of posts all of which were within the assumed sphere of advanced practice. The five most commonly used titles in descending order were CNS, followed by specialist nurse or nurse specialist, ANP, nurse practitioner and lead nurse.

This ability to cross the traditional boundaries and offer a duality of a nursing foundation with advanced practice has been viewed as a strength of the role with ANPs believing that it enhances the care they are able to deliver (Carryer and Adams, 2021; O'Connor *et al.,* 2018). Conversely, ANPs themselves describe their role as been suspended between nursing and medicine, with a loss of their nursing identity (Andregård and Jangland, 2015), which Thompson and McNamara, (2021) caution may result in the potential of ANP roles in patient care not being fully realised. It has been suggested by Mayfield *et al.,* (2021) that hierarchical management styles which, like those in nursing, are inadequate for managing employees in organisations which demand flexibility and in which employees, such as ANPs, engage in transboundary working (Casey and O' Connor, 2021).

Thus, there is emerging awareness that ANPs are practicing in a space which does not rest comfortably in either the nursing or medical paradigm. The concept of a 'third space' was introduced by the post-colonial theorist Homi K Bhabha. It attempts to explain cultural hybridity, where Bhabha argues that a new hybrid identity results from the interweaving of coloniser and colonised; that is the notion that ideas are made up of all the different cultures with which they have contact (Bhabha, 2010). The hybrid is positioned between the coloniser and colonised in the third space, not as a static identify but ever changing (Bhabha, 1996) and allows cultural practices to be transformed in response to changing context and changing needs (Bhabha, 2004). Taylor, (1991) posits that the hybrid identity imbues the hybrid with an ability to move between both cultures, negotiating translating and mediating affinity and difference. Bhabha, (2010) employs the image of a stairwell to represent this hybrid space; this stairwell connects to supposed opposites of upstairs and downstairs.

Practicing in this new territory between traditional boundaries gives rise to the questions about whether there is a fundamental repositioning of the ANP role with authors such as Nadaf, (2018) raising questions about when advanced practice stops being nursing. Perhaps because of the failure of integration, ANPs have come to occupy a third space that rests between medicine and nursing and a recognition that ANPs may work in silos, operating in isolation from the wider healthcare team (Goldberg *et al.*, 2014; Wood *et al.*, 2021a) plateauing in specialized silos which precludes movement to other areas of practice (O'Connor *et al.*, 2018), resulting in a situation where ANPs lack cohesiveness and a brand or identity (Nadaf, 2018). This lack of a clear identify may contribute to the underutilisation of ANP as their potential is not fully realized at local or strategic or policy level (Adams and Carryer, 2021; Thompson and McNamara, 2021). Moreover, there is evidence that nurses' work environment influences a range of outcomes including job satisfaction and intention to leave (Nantsupawat *et al.*, 2017). It is important, therefore, to examine whether this role ambiguity is affecting ANPs at the micro level, and whether, as posited by Goldsby *et al.,* (2021), that outcomes such as job satisfaction are associated with self-leadership.

1.13. Leadership in healthcare

Effective leadership is required to initiate, drive and actualise reforms within healthcare organisations. Leadership within healthcare, which has been dominated by the biomedical lens,

is uniquely challenging as leadership is spread across management and clinical workforces (Ayeleke *et al.,* 2018; Carryer, 2020). It is no surprise, therefore, that leadership is one of the most extensively studied occurrences in healthcare. Most leadership definitions reflect traditional understandings of the leader-follower relationship, focusing on individual behaviours and positional power (Gordon *et al.,* 2015), with an implication that the leader in a position of power exerts influence and directs the activities of others with less power.

Leadership theories have sought to explain how and why leaders emerge. A range of leadership theories exist from those which simply define personality traits to those which involve more complex processes involving inspiring teams and communicating a vision (Slåtten *et al.,* 2021; Swan, 2018; Venus *et al.,* 2019). Of these, transactional and transformational leadership, which were first proposed by Burns, (1978) have received most attention over the past decades. Transformational leaders are typically described as motivating the collective performance of their groups and facilitating them to achieve higher outcomes beyond their self-interest (Liu and Li, 2018). Underneath this leadership, the leader coaches staff rather than telling them what to do, winning hearts and minds instead of controlling them. Conversely, transactional leadership involves an exchange process in which the leader provides rewards/punishments in return for the subordinate's effort and performance (i.e. it is a transactional relationship) (Aga, 2016). In response to high profile failures in leadership (e.g. Enron) values based leadership theories such as servant leadership (Copeland, 2014) have recently gained increased prominence.

Failures in healthcare leadership have been reported by a number of investigative reports including Francis, (2013: 3) who found that incidences of the essential needs of patients were not met, staff treating patients and their families with indifference and mangers being more concerned with targets than patient care resulted in "an insidious negative culture involving a tolerance of poor standards and a disengagement from managerial and leadership responsibilities". Similarly, Keogh (2013) in a review of health trusts in the UK found failures in quality professionalism, leadership and governance. This report found instances where inadequate staffing levels were not reported, lack of oversight and a failure of those in clinical leadership positions to drive quality and improve safety (Keogh, 2013). Ineffectiveness in clinical leadership was also uncovered by Kirkup, (2015) who found a failure to address underlying cultural issues, deficiencies in clinical practices and a lack of a shared vision and cohesion among staff led to the death of babies in Morecambe Bay maternity services. In these

reports, the common theme was the repeated absence of leadership over prolonged periods which resulted in alarming and disturbing failures in patient care. A number of similar recommendations emanate from these reports. Firstly, they all recommend the fostering of patient centred healthcare leadership to militate against reoccurrence. Secondly, they assert that not only must high quality clinical leaders be equipped with the appropriate skills but that they must also receive the necessary supports to be sustainable. Thirdly, they all advocate leadership models that prioritise value of care over volume of care to optimise health system performance.

Such deficiencies in care have led to increased saliency for leadership at the point of care to foster the creation of healthy and safe clinical environments while ensuring quality care delivery (Boamah *et al.,* 2018; Daly *et al.,* 2014a; Doherty, 2014; Lotfi *et al.,* 2018; Mc Carthy *et al.*, 2018). There is a recognition that clinical leaders require investment in terms of education, support, reward and recognition and external review from their healthcare organisations to be effective (Cable and Graham, 2018; Daly *et al.,* 2020; McSherry and Pearce, 2016). Such investment in the development of leadership capacity and capability at the point of service delivery is critical and has been described as the essential ingredient in delivering quality care, nurturing innovation and improving productivity (Grindel, 2016; Orme and Campbell, 2019). As a result, there have been initiatives to improve the clinical leadership skills of nurses and midwives (Leigh *et al.,* 2019; Mc Carthy *et al.,* 2018; Pizzirani *et al.,* 2020), and also in advanced practice roles within nursing (Anderson, 2018). However, as illustrated in a study by Knight *et al.,* (2015), which examined the protective mechanisms used by clinical nurse leaders when policy and practice were not aligned, the presence of a policy does not necessarily ensure its enactment in practice.

Thus, healthcare organisations have embraced leadership at the clinical interface as a method of improving healthcare delivery largely in response to highlighted inadequacies in alternate leadership methods such as autocratic (Hunt and Fitzgerald, 2018), tyrannical (Akhtar and Shaukat, 2016; Einarsen *et al.,*2007) and laissez faire approaches (Harrington, 2021; Klasmeier *et al.,* 2021). In nursing, there is an increasing awareness that, what have been termed toxic, abusive or destructive leadership practices (Labrague *et al.,* 2021; Lavoie-Tremblay *et al.,*2016; Mullen *et al.,* 2018), can result in negative outcomes in terms of job satisfaction, absenteeism, psychological distress and intention to leave (Labrague *et al.,* 2020; Lavoie-Tremblay *et al.,*2016) and patient outcomes (Labrague *et al.,* 2020) at the clinical level. Yet, leadership without a context remains an arbitrary concept. This is illustrated by the work

of Schmidt and Linenberger, (2020) and Crabtree *et al.,* (2020) who show that leadership is context driven, taking on different forms, including being shared in teams, pooled at the top of organisations, spread (or distributed) across boundaries over time, or produced through interaction.

1.14. ANPs as self-leaders, leading others, leading the organisation

An emerging leadership development paradigm suggests that organisations focus on a multi-level strategy of developing the individual to lead themselves (i.e. self-leadership), lead others and lead at an organisational/systems level (Williams and Weber, 2019). This framework has been adopted by nursing organisations to frame competency categories (ANA, 2018) and in the wider healthcare literature as a means of developing leaders in healthcare (Rayburn *et al.,* 2018; Shannon and Sebastian, 2018; Yost, 2014). The leadership dimension of the ANP has attracted a great deal of attention over the past twenty years (Elliott, 2016; Furlong and Smith, 2005; Rosa *et al.*, 2020; Lamb *et al.*, 2018). Leadership is a central tenet of advanced practice roles and is interwoven within definitions, policy statements and practice ambitions of ANPs (Anderson, 2018; Kraaij *et al.,* 2020; Ryder *et al.,* 2019). There have been various attempts to conceptualise the specific domains in which ANPs enact their leadership role with numerous authors delineating along clinical and professional leadership activities (Begley *et al.,* 2010; Elliott *et al.,*2013; Higgins *et al.,* 2014), with others describing ANP leadership activities as either "patient-focused leadership" and "organization and system-focused leadership" (Lamb *et al.,*2018). While the question of how ANPs attempt to operationalise their leadership role has been considered, for ANPs having effective leadership capabilities are necessary to ensure that their own development needs, the needs of their patients and the organisational needs are met. Given the emphasis on leadership in advanced practice literature and policy and the reality that ANPs are viewed as leaders, it is necessary to understand how ANPs feel and behave as leaders.

1.14.1. Self-Leadership in Advanced Practice

The concept of self-leadership rests on underpinning psychological theory and research including: self-regulation theory, social-cognitive theory, self-management theory, intrinsic motivation theory, and self-determination theory and positive psychology (Furtner *et al.*, 2015; Mayfield *et al.*, 2021; Stewart *et al.*, 2019). Self-leadership is concerned with individuals controlling their own behaviour and influencing themselves towards achieving desired behaviours and outcomes through the adoption of specific skills, behavioural strategies, and cognitions (Cristofaro and Giardino, 2020; Kör, 2016). Self-leadership has been defined as the general capability or skill to engage in the regulation of one's behaviour (Stewart *et al.,* 2019). Self-leadership theory emerged in the 1980s from the awareness that traditional top-down flow of instructions, orders, control, and management from a team leader or organization to its subordinates was suboptimal for individuals' achievement of goals due to rapid organizational change (Bum, 2018; Marques-Quinteiro *et al.*, 2019; Ugoani, 2021). Self-leadership consists of specific behavioural and cognitive strategies designed to positively influence personal effectiveness. The self-leadership model, developed by Neck *et al.,* (2020), is constituted of behaviour focused strategies, constructive thought pattern strategies and natural reward strategies and draws on previous self-leadership instruments to measure the self-leadership skills, behaviours, and cognitions of individuals.

The behaviour focused strategies are self-goal setting, self-reward, self-punishment, self-observation and self-cueing. These strategies aim to increase the ANP's self-awareness and to facilitate behavioural management toward necessary but unpleasant tasks (Goldsby *et al.,* 2021; Neck *et al.,* 2019). Constructive thought pattern strategies are designed to facilitate the formation of habitual ways of thinking that can positively impact performance and may include identifying and replacing dysfunctional beliefs and assumptions (Neck *et al.,* 2019). The constructive thought pattern strategies of visualising successful performance, self-talk and evaluating beliefs and assumptions are used to create a unique psychological world which in turn affects the physical world the ANP inhabits (Neck *et al.,* 2019). The natural reward strategies attempt to foster situations that means that an individual is motivated or rewarded by the inherently enjoyable aspects of a task or activity (Goldsby *et al.,* 2021; Neck *et al.,* 2019). This can happen in two distinct ways: the first is to embed tasks into pleasing contexts, such as an ANP conversing about an interesting topic or associating with agreeable people while

working; the second is to emphasise the higher purpose of a task while deflecting the unpleasant aspects, such as an ANP being engaged in time consuming wound care, inspired by the higher goal of reduced wound complications and increased patient wellness. ANPs as self-leaders can use behaviour focused, constructive thought pattern and natural reward strategies to facilitate self-development, but also to create a practice environment where professional collaborative practice can thrive as self-leadership is known to increase organisational performance (Ugoani, 2021). The relationship between self-leadership, its dimensions and the individual concepts are graphically represented in Figure 1.

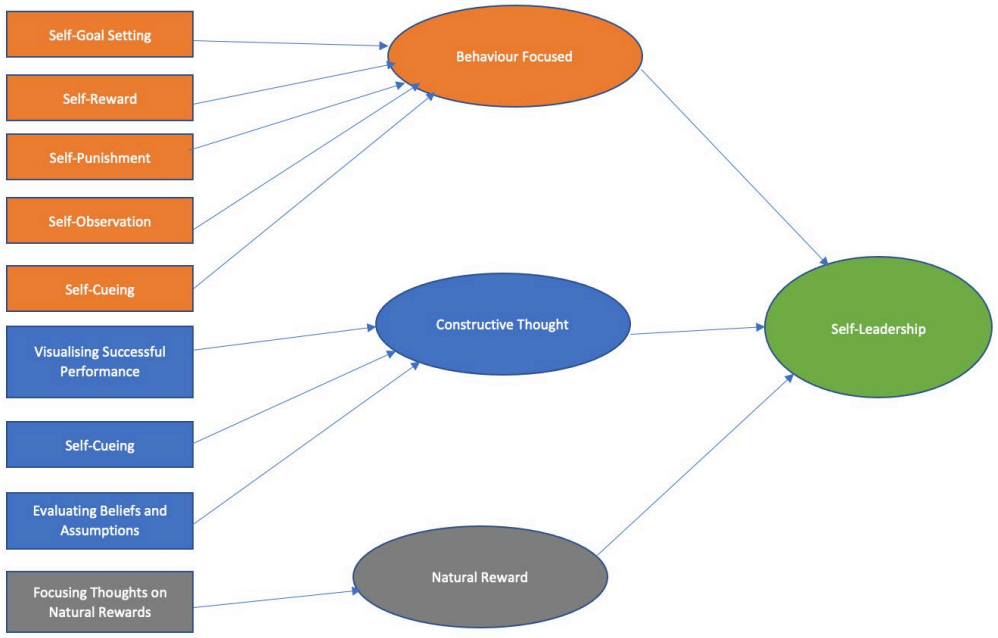


Figure 1: Self-Leadership and its dimensions and individual concepts

Self-leadership may be of particular relevance to ANPs who act as clinical leaders, but practice in a third space with less reliance on external influence, which requires them to direct themselves and make decisions independently of the wider healthcare team (Chai *et al.*, 2021; Harari *et al.*, 2021; Peacock and Hernandez, 2020; Thompson and McNamara, 2021). Moreover, the job demands of the clinical environment necessitate that ANPs possess self-leadership skills (van Dorssen-Boog *et al.,*2020). Self-leadership may facilitate ANPs to regulate their own behaviour with resultant improvement in individual performance. Engagement in self-leadership strategies facilitates individual creativity and promotes constructive behaviour (Lin, 2017a). Two recent reviews of the extant literature examining self-leadership (Goldsby *et al.,* 2021; Harari *et al.,* 2021) have found that greater levels of self-leadership were effective in buffering against a range of potential stressors, thus increasing individuals' psychological resources that strengthened their positive affect resources (such as conscientiousness, openness and extraversion, emotional regulation, ability to manage stress). A detailed description and examples of self-leadership strategies are presented in Table 2.

Table 2: Self-Leadership strategies, description and examples

Dimension	Subscale	Description	Example
Behaviour Focused Strategies	Self-Observation	Encompasses all the information that one is aware of about oneself. Evaluating oneself in different situations provides information regarding how certain situations occur	A person who examines why they struggle to achieve daily study targets, may identify situations that they want to create or avoid to achieve their goal
	Self-Goal Setting	Refers to an individual's ability to recognize the need for, establish, and work toward specific goals and includes all the purposeful actions taken to attain a predetermined outcome.	Self-sets personal goals for one's own performance
	Self-Reward	Concerned with creating rewards for achieving a defined outcome	A student may reward themselves with a favourite programme or exercise in reward for achieving study targets
	Self-Punishment	Self-punishment is the opposite strategy to self-reward, and can be used to achieve desired behaviours	One may use constructive self-criticism to reduce feelings of guilt and improve their performance (as opposed to excessive self-punishment)
	Self-Cueing	The identification and creation of positive cues or prompts to take certain actions	Making lists, setting written priorities or creating a work environment which fosters productivity and innovation
Constructive Thought Pattern Strategies	Visualising successful performance	Constructing a mental image of a future successful performance	One may visualize an achievement to move beyond current circumstances
	Self-talk	Refers to what individuals tell themselves out loud or in their head about a difficult situation or problem	switching internal narrative to ideas like '*I can do better next time*' or *'I choose to learn from my mistakes, not be held back by them*'.
	Evaluating Beliefs and Assumptions	Involves examining one's own beliefs and assumptions and replacing irrational beliefs and assumptions with more rational ones	
Natural Reward Strategies		Focuses on the more enjoyable aspects of an activity and are designed to help create feelings of competence and self-determination which are primary mechanisms of intrinsic motivation	Leaders may actively modify tasks through perceptual or physical means to create a motivational climate

The importance of self-leadership can be seen in its associations. Self–leadership is positively related to adaptive performance and job satisfaction (Hauschildt and Konradt, 2012). The benefits of self-leadership extend beyond the individual ANP, as it has been highlighted that individuals with self-leadership function more effectively within teams and organisations. Exceptional self-leadership has been identified as key to innovation in workplaces (Gomes *et al.,*2015) and sustained performance (Neck and Manz, 1996). Moreover, self-leadership has

been identified as a pre-requisite to more effectively leading others (Browning, 2018) and has been demonstrated to be a significant predictor of person-centred care (Shin and Yeom, 2021). In addition, it has been reported that self-leadership can result in effective leadership, stability and enhanced productivity within organisations (Sang Long *et al.,*2015) as self-leaders contribute extra work beyond formal expectations.

1.14.1.1. Theoretical Framework

This study explores the unique relationship self-leadership has to commitment to the workplace, work engagement, influence at work, job satisfaction and intention to leave. In research which adopts an objectivist deductive approach to explore these relationships, a theoretical map or framework needs to be constructed and defined (Varpio *et al.*, 2020; Williams, 2019). As explained by Williams, (2019) the construction of a theoretical framework has several purposes in this research. Firstly, it provides a structure for the research by relying on formal theory. Also, in addition to providing flow and cohesion the theoretical framework threads through the thesis influencing all aspects of the study. Similarly, as emphasised by Kivunja, (2018) the theoretical framework will be applied to the data collection, data analysis, discussion, recommendations and even conclusion. Grant and Osanloo, (2014) assert that the theoretical framework maintains a focus on what the study is trying to achieve, and therefore was considered in the planning of this research study. Research in self-leadership has recognised that there is no established theoretical frameworks for the development of self-leadership in the literature (Du Plessis, 2019).

1.14.1.2. Self-Determination Theory

While recognising that leadership behaviours are conceptualised in different ways the self-determination theory, which grew from the work of Ryan and Deci (2000), was the theoretical framework chosen to examine self-leadership and a range of psychosocial variables among ANPs. The reasons for this are that the three basic psychological needs (autonomy, relatedness, and competence) of self- determination theory which serve as the basis for self-leadership relate both to the ANP role and also to the construct of self-leadership (Table 3).

Table 3: Interaction between Self-Leadership and Self-Determination Theory

Self- Determination Theory	Autonomy	A premise of the self-leadership construct is that ANP's autonomously regulate their own roles responsibly. Also requires that job autonomy is facilitated by the organisation (van Dorssen-Boog *et al.*, 2020)
	Relatedness	By engaging in work-related activities such as self-leadership, ANPs can satisfy their sense of commitment towards the organization which may stem from already invested psychosocial and organizational resources, and work-related needs (including relatedness) (Inam *et al.*, 2021)
	Competence	Self-leadership can satisfy the psychological need for competence because ANPs actively mobilize their social resources that allow their role performance (Bakker *et al.*, 2021; Bakker and Demerouti, 2017)

Self-determination theory (Deci and Ryan, 2008; Ryan and Deci, 2000) is a general theory of human motivation that has been previously been applied to the health domain (Gillison *et al.*, 2019; Ntoumanis *et al.*, 2021). It has also been previously argued that self-determination theory can be drawn upon to enhance and activate employees' intrinsic motivation (Dorssen-Boog *et al.*, 2021; Ju *et al.*, 2019), which is an important influence of the psychosocial work environment. Previous studies have used and investigated self-determination theory as a theoretical framework to investigate the independent variables in this study: commitment to the workplace (Forner *et al.*, 2020; Onyishi *et al.*, 2019), work engagement (Schaufeli, 2021; Zeijen *et al.*, 2020), influence at work (Tamunosiki-Amadi and Dede, 2015), job satisfaction (Demircioglu, 2021) and intention to leave (Shim *et al.*, 2021).

The theory posits that all human beings have a set of basic psychological needs including the need for competence (to feel confident and effective in relation to their work), relatedness (to care for and feel cared for by a group and to have a sense of belonging to that group) and autonomy (needs to be satisfied for optimal wellness and performance) (González-Cutre *et al.*, 2016). The theory distinguishes between what the authors describe as autonomous motivation and controlled motivation. Autonomous motivation describes the behaviour of employees when they feel a full sense of willingness, volition and choice. Autonomous motivation can be further subdivided into intrinsic motivation and extrinsic motivation. In contrast, controlled

motivation refers to the behaviours or actions of employees to get some reward, or to avoid some punishment. Controlled motivation behaviours arise from a sense of obligation or pressure. Ryan and Deci, (2000) assert that when individuals are autonomously motivated their performance, well-being, engagement are greater than when they are motivated by control. When applied to ANPs, the self-determination theory would suggest that instead of the strength of motivation as the determinant of action, the quality or type of motivation is the key for participation in any action (Lox *et al.*, 2019) and suggests that ANPs are likely to invest more effort and perform at a higher level when they are intrinsically motivated (Leroy *et al.*, 2015).

Self-determination theory asserts that the concept of psychological needs being universal is important as it allows us to delineate and understand what it is that will promote autonomous motivation. Deci and Ryan argue that individuals are innately disposed toward psychological growth, and this growth can be facilitated or thwarted by the social environments in which they practice (Deci and Ryan, 2013). Deci and Ryan's self-determination theory is important for this study: it allows the researcher to gain an insight into the extent to which ANPs basic psychological needs are met, and allows a determination of where improvements can be made.

When ANPs feel competent, when they feel related to others and when they feel a sense of volition they will feel autonomously motivated which fosters natural propensities for growth and integration, as well as for constructive social development and personal well-being (Ryan and Deci, 2000). It has been postulated that even if the aspects of autonomy, and competence are satisfied, but the relatedness aspect is not there will be effects for the employees well-being and performance. Ryan and Deci, (2000) assert that satisfaction of the three basic psychological needs has important behavioural consequences. A graphical representation of the theoretical framework for this study is presented in Figure 2.

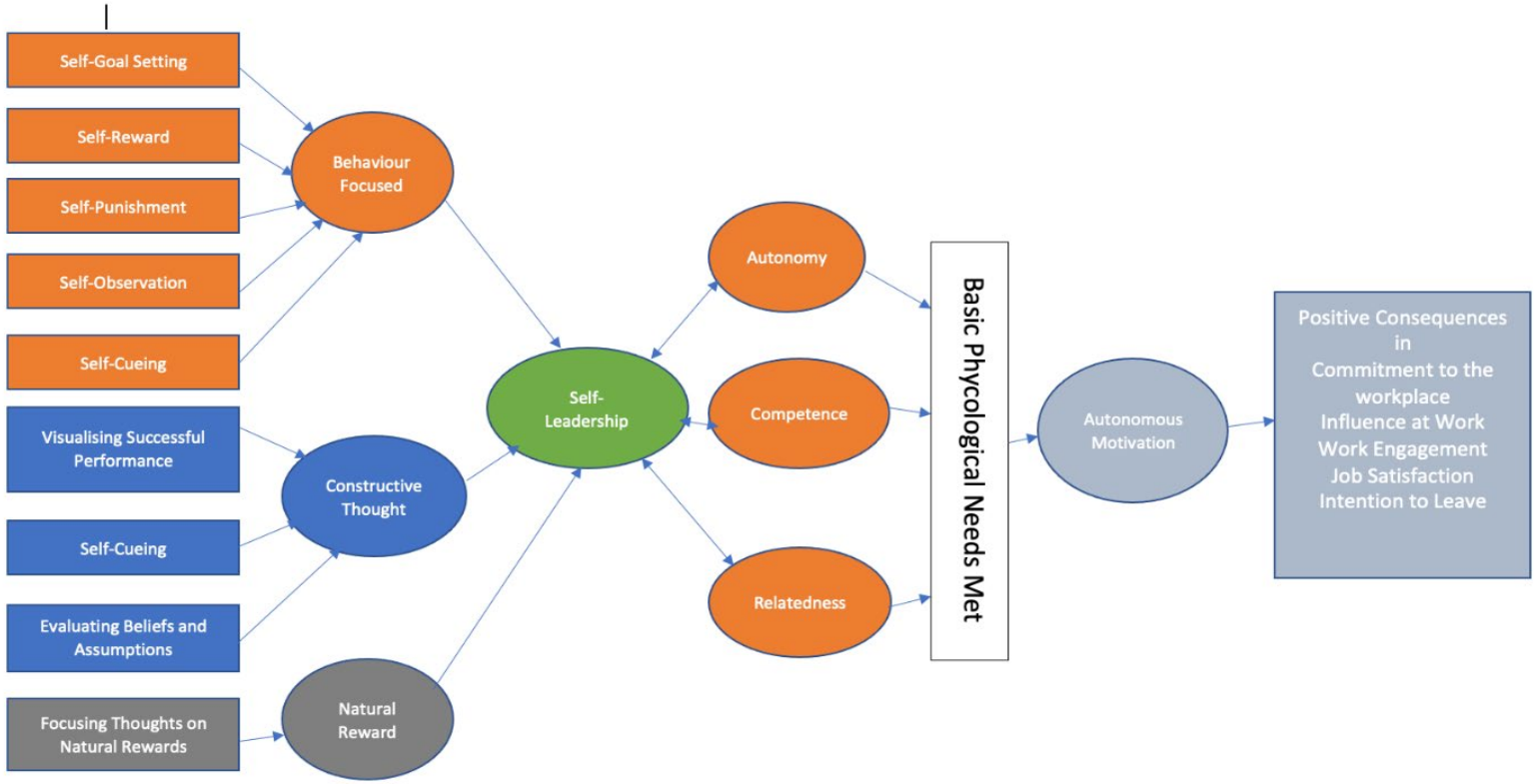


Figure 2: Theoretical Framework

1.14.1.3. Interaction of Self-Leadership and External Leadership

Self-leadership is not a substitute for external leadership and does not suggest that traditional leadership from managers is not required. Rather effective self-leadership can be complemented by and facilitated by external leadership (Bondarouk *et al.,* 2018; Stewart *et al.,* 2019). Also, self-leadership, it has been argued, facilitates more effective leadership of others (Ugoani, 2021). Such attributes are important to ANPs who are clinical and strategic leaders who forge collaborative relationships but often do not have formal authority which, among other factors, has been identified as inhibiting ANPs enacting their leadership role (Anderson, 2018; Giles *et al.,* 2018). That individuals are equipped with self-leadership ability does not infer that individuals cannot benefit from external influence. In other words, you cannot lead yourself by yourself. External leadership is a moderating force in self-leadership, where empowering leaders facilitate the self-leadership of individuals and teams (Stewart *et al.,* 2011). This has particular relevance for ANPs who require the support of operational managers and other stakeholders to enact their leadership role (Giles *et al.,* 2018). It may therefore be argued that self-leadership competency is a necessary skill set for ANPs with benefits at the individual level (self-organization of work), group level (self-management teams, shared leadership), and organizational levels (boundary spanning, achievement oriented organization cultures) (Furtner *et al.,* 2015).

As outlined, much of the prior work has focused on the interpersonal approach examining the influence that ANPs exert over others, resulting in little attention being paid to the intrapersonal level in which the leadership originates within the ANP for the purpose of influencing *oneself*. While the leadership role and capability of ANPs is established, it has been asserted that knowing and leading oneself is a prerequisite for leading others (Chi, 2020; Hamdoun, 2021), and it is therefore important to consider self-leadership from the perspective of ANPs.

There has been an increase in empirical studies examining self-leadership in organizational settings (Bendell *et al.*, 2019; Flores *et al.*, 2018; Marvel and Patel, 2018; Müller and Niessen, 2019). This is important as one of the criticisms of the self-leadership research was that it was largely conceptual, with limited empirical research (Neck and Houghton, 2006a). It has also been argued that the construct of self-leadership may be indistinct from motivation and personality constructs which are concerned with need for achievement, self-regulation, self-efficacy and that self-leadership represents a mere repackaging of elements of these constructs

(Guzzo, 1998). However, a quantitative study by Furtner *et al.,* (2015) has affirmed the unique conceptual status of self-leadership, distinct from closely related concepts such as need for achievement, self-regulation and self-efficacy. As a distinct concept self-leadership therefore requires in-depth research in its own right.

1.14.2. Leading others in Advanced Practice

The literature is replete with references to advanced practice roles providing leadership to others both in Ireland (Elliott, 2016; Higgins *et al.,* 2014; Ryder *et al.,* 2020, 2020) and internationally (Giles *et al.*, 2016; Rosser *et al.*, 2017; O'Byrne *et al.*, 2020; Bergman-Evans, 2021). However, ANPs are often not recognised as formal leaders as their work is largely spent delivering direct patient care (Lamb *et al.,* 2018) which has resulted in the leadership role of these practitioners remaining poorly elucidated and ANPs lacking competency to support others to lead (Leggat *et al.*, 2015; Casey and O' Connor, 2021). While it is acknowledged that leadership exists in all professional roles at all levels (Schein and Schein, 2018; Stanley and Stanley, 2018), the expression of such leadership differs per professional role. Adding to the difficulty, leadership differs in form and expression dependant on the context of the leadership activity (Oc, 2018; Visser and Scheepers, 2022), and there continues to be a lack of emphasis on leadership development in ANP educational preparation (Casey and O' Connor, 2021).

Leadership of others by ANPs and the effect that ANP clinical leaders have on those within their sphere of influence is a recurring theme in the literature. For example, ANPs advise and support (Giles *et al.,* 2016; Mianda and Voce, 2017), influence and co-ordinate care (Elliott *et al.*, 2013; Gordon *et al.*, 2017; O'Connor *et al.*, 2018), and influence changes in healthcare practice (Anderson, 2018). In support of this view, an ethnographic study by Williamson *et al.,* (2012) illustrated the pivotal role of clinically based ANPs in influencing nursing and medical practice and as facilitators of quality and holistic patient care. Leading others by providing support with autonomous motivation has been shown to increase the subjective well-being of the leader by satisfying the psychological needs outlined in self-determination theory (Ryan and Deci, 2000). It has been argued therefore that support provision to others is a self-determination strategy (Bakker, 2014; Zeijen *et al.*, 2020). Moreover, the interdependence between leadership and followership has been established by many authors (Anand *et al.,* 2018; Regts *et al.,* 2019; Zhou and Wu, 2018). The relationship between ANPs and those they influence does not sit comfortably in the traditional reporting hierarchies associated with healthcare. Rather than being concerned with the transmission of work or direction from leader

to follower, ANP leadership is more consistent with what may be described as a joint accomplishment between the ANP and those they support. One difficulty with this approach is that the ability to enact leadership through influence may vary between individual ANPs due to the absence of a formal leadership role. Also if the leadership capacities of ANPs remains unnoticed, the leadership potential of ANPs is unlikely to blossom (Gardenier *et al.,* 2020). This creates difficulty for new and existing ANPs to determine if they are enacting this aspect of their role, especially when practicing in complex, fast-paced health care systems where change is omnipresent.

1.14.3. Leading the Organisation

ANPs have been identified as expert practitioners and as central to the enactment of national healthcare policy (Conrad *et al.,* 2020). Indeed, Rosa *et al.,* (2020) contend that ANPs who have the potential to influence global health by narrowing disparities remain underutilised at a strategic level and that their potential to lead at an organisational level remains untapped.

It may be that, as argued by Casey and O' Connor, (2021) current ANP positions are disproportionally focused on the delivery of clinical care which impedes their growth and potential to lead at an organisational level. Brady and Drennan, (2020) acknowledge that, while the emphasis of ANP work is on meeting the immediate clinical needs of patients, there is a need to nurture the leadership dimension of the role so that ANPs can contribute to leadership at an organisational level. At an organisational level ANPs can lead by developing leaders, using research to enhance nurse practice, improve care quality, facilitate collaboration and contribute at committee/ board level (Lamb *et al.,* 2018).

1.15. Leadership and Sociodemographic and Professional Characteristics

Many leadership studies have been conducted that have explored the influence of selected sociodemographic and professional characteristics of individuals on their leadership style (Kiliç *et al.,*, 2020; Lamm *et al.,* 2019, 2021). Namely these are: gender, age, time in employment education, and time working as a lone practitioner and each of these characteristics will be addressed below.

There is a perception that gender has influenced nurses' ability to lead (Anderson, 2018), and this perception of leadership ability may be one reason why male nurses are disproportionally represented in senior leadership positions (Daly *et al.,* 2014b). In a study of the attitiudes of one hundred and sixty medical residents, Ju and van Schaik, (2019) found bias against female nurse practitioners as resuscitation team leaders. It has been argued that organisations are ill-equipped to nurture leadership potential of women (Kalaitzi *et al.,* 2017), with barriers including lack of career advancement opportunities, gender gap, stereotypes, work-life balance and lack of mentoring identified (Kalaitzi *et al.,* 2017; O'Neil *et al.,* 2015).

The association between age and leadership effectiveness has long been debated (Nguyen *et al.,* 2015; Walter and Scheibe, 2013). In nursing, Herman *et al.*, (2017) found that leadership evolution with age peaked in age bracket 60 to 69 years, declining thereafter as RNs transitioned toward retirement and part-time employment. The development and usage of self-leadership was found to be affected by age in a study by Ricketts *et al.,* (2012) who found that younger individuals in early career life stages have more accessible self-leadership skills when compared to older individuals in middle to late career life stages in the education sector. Conversely Kunagornpitak *et al.,* (2019) found that participants, also in the education sector, who were aged 51 years and older had self-leadership behaviours higher than those who were aged 30 years and younger.

The time which advanced practice providers are in their current employment as well as their total years practicing as an advanced practice provider is important. There is evidence that one year of advanced practice nursing experience is required to implement all advanced practice role dimensions, including leadership (Lamb *et al.*, 2018) and a recognition that novice ANPs require time to be fully internalised into their role (Brady and Drennan, 2020). In

contrast, there is an expectation that all ANPs perform a leadership role (Anderson, 2018) and therefore in this study it is important that all ANPs' views are sought in research exploring the leadership dimension of such roles.

While it is recommended by the International Council of Nurses, (2019) that ANPs be educated to Master's degree level, there is debate regarding the importance of academic qualifications in fulfilling the leadership dimension of these roles. While programmes such as the Doctor of Nursing (DNP) have been ultimately designed to produce leaders in nursing (Conrad *et al.,* 2020; Hoyle and Johnson, 2015), it has been posited by Perri *et al*., (2019) that a willingness to take on roles outside one's formal training is an important leadership attribute perhaps suggesting that experiential learning is more important. This is relevant to ANPs who are expected to fulfil a leadership role despite an acknowledgement that the leadership training in ANP preparation programmes remains underdeveloped (Casey and O' Connor, 2021). Nonetheless, to register as an ANP in Ireland there is a requirement to have attained masters' level education (Department of Health, 2019; Kerr and Macaskill, 2020).

Time working as a lone practitioner (i.e. working without the support of another ANP or collaborative team) makes it difficult for ANPs to leave their clinical work to take part in leadership activities (Elliott *et al*., 2016; Higgins *et al.,* 2014). Time constraints, heavy clinical workloads and isolation from the wider healthcare team, especially where ANPs are a solo practitioner within a clinical area is a recurrent theme in the literature (Giles et al., 2018; Hughes, 2018; Kerr and Macaskill, 2020). It has been reported that working alone for ANP contributes to feelings of isolation, lack of perceived support and increased stress (Yuill, 2018). In a multi-centre qualitative descriptive study, Kraaij *et al.,* (2020) found that working alone was a significant barrier to taking on leadership roles, which may impede their contribution to leading themselves, others and the organisation. In a study by Hoyt *et al.,* (2018), ANPs working alone had the lowest rate of consistent diagnosis between admission and discharge (92.9%), while those working in collaborative teams had the highest rate (97.1%) This reinforces the finding by Martin and Reneau, (2020) that while working autonomously often equates to working alone, autonomous ANP practice within healthcare is enriched by the consultation and collaborative management aspects of the role.

1.16. Psychosocial Work Environment

The relationship between work environment factors and nurse outcomes such as burnout and job dissatisfaction has been extensively studied (Aiken *et al.,* 2010; Butler *et al.,* 2019; Kutney-Lee *et al.,* 2013; McHugh and Ma, 2014) with clear relationships found between the work environment and the quality of patient care (Fackler *et al.,* 2015; Pich *et al.,* 2017) team member engagement, enhanced communication and collaboration (Shirey, 2017). Conversely negative effects of psychosocial working conditions may contribute to the adverse health effects such as impacts on mental and somatic health, job satisfaction, turnover intention and productivity (Fløvik *et al.,* 2019). Misener and Cox, (2016), who developed a nurse practitioner specific scale of job satisfaction, concluded that extrinsic factors (poor work environment and work conditions) led to the highest levels of job dissatisfaction.

Measurement of aspects of ANPs' psychosocial work environment gained increased importance amidst the COVID-19 global pandemic as health emergencies are recognised as a critical risk factor to the psychosocial health and wellbeing of nurses (Mahendran et al 2020, Giménez-Espert and Prado-Gascó Vicente 2020). Previous epidemics/pandemics have increased the psychosocial stress experienced by healthcare workers, with the highest levels experienced by nurses interacting directly with patients (Billings *et al.*, 2021; Lai *et al.*, 2020).

The interaction of the psychosocial work context and the development of leadership skills has the potential to contribute to channelling effective employees to leadership positions rather than the most dominant or narcissistic individuals (Bracht *et al.,* 2021). The psychological and social dimensions of the work environment can have a significant impact on employees' behavioural attitudes at work (Insel and Moos, 1974; Mj *et al.,* 2017). Previous research has sought to investigate the relationship between the psychosocial risk and leadership in health service employees (Backman *et al.*, 2021; Januario *et al.*, 2019; Stengård *et al.*, 2021). In a study investigating nursing home managers' leadership, person-centred care and psychosocial climate, Backman *et al.,* (2021) concluded that nurse managers' leadership was pivotal to improving the psychosocial climate. However, in a study of a large Swedish general working population sample no association was found between leadership and psychosocial work stressors (Stengård *et al.,* (2021). It may be that there are contextual factors in nursing such as close

working environments which account for the influence of nursing leadership on the psychosocial climate.

Much of this prior research has focused on the extent to which leadership from managers influences the psychosocial climate in which staff feel valued and acknowledged and fosters a range of positive outcomes including innovation and person centred care (Ree, 2020; Sjögren *et al.,* 2017). While it has been established that leadership and psychosocial working conditions are interrelated and are among the topics which form a critical foundation for promoting patient and occupational safety in hospitals (Wagner *et al.,* 2019), the relationship between self-leadership and the psychosocial work environment requires further investigation. Given their potential to contribute to healthcare leadership it is important to understand the psychosocial conditions that exist for ANPs to maximize the potential of this workforce in healthcare systems.

Healthy psychosocial work environments are described as having "policies, procedures, and processes clearly outlined to empower nurses to meet organizational goals, to achieve satisfaction in their jobs, and to retain nurses in healthcare settings" (Huddleston *et al.,* 2018: 161). Key aspects of a healthy work environment include: competent employees, appropriate workloads, effective communication, collaboration, and empowerment which leads to positive outcomes for patients, employees, and the organization (Huddleston, 2014). The American Psychological Association outline five categories which promote a psychologically healthy workplace; employee involvement, work-life balance, employee growth and development, employee recognition, and health and safety (Grawitch and Ballard, 2016). Five aspects of ANP work environments shall be researched in this thesis: influence at work, commitment to the workplace and work engagement, job satisfaction and intention to leave. These aspects will be explored in more depth below.

1.16.1. Influence at work

Influence at work is concerned with the distribution of power-related activities between people in a work environment (Heller, 1998). With respect to researching the workplace, Burr *et al.,* (2019) suggest that influence at work is concerned with the degree to which employees can influence different aspects of their work such as the ordering of tasks or the planning of the

work itself. The theme of role limitation in advanced practice roles is prevalent (Thompson *et al.,*2020). The under-leveraging of ANPs practicing to capacity rather than capability is supported by the findings of Athey *et al.,* (2016) who determined that the greatest predictor of ANP job satisfaction was the feeling that their skills were being fully used. Contextual features of the ANP role such as practicing to capacity and not capability, absence of a voice at the policy level and ambiguous and conflicting role expectations were negatively correlated with job satisfaction (Pasarón, 2013). The influence at work scale was chosen as a perception of being unable to influence one's own work situation increases stress levels among healthcare professionals while decreasing efficiency (lfering *et al.,* 2017). On the other hand, empowering ANPs and increasing their influence at work by granting greater autonomy engenders a greater sense of support and increases intrinsic motivation and provides positive work attitudes (Tamunosiki-Amadi and Dede, 2015). Also given that ANPs have been purported to inhabit a tenuous position within healthcare systems (Thompson and McNamara, 2021), it is imperative to measure the extent of an ANP's influence at work.

1.14.2. Commitment to the Workplace

Commitment to the workplace deals with the degree to which employees are committed to the organisation rather than to the work itself (Burr *et al.*, 2019). As a concept, it has attracted researchers who have sought to define and understand the contribution of commitment to the workplace to theory and practice for at least half a century (Cohen and Veled-Hecht, 2010).

Commitment to the workplace is an important performance indicator within the healthcare industry due to its impact on both individual and organizational performance (Baird *et al.,* 2019; Ellenbecker and Cushman, 2012). Healthcare workers who are committed to the organisation are likely to provide better quality of care (Mosadeghrad and Ferdosi, 2013; Sharma and Dhar, 2016). Commitment to the workplace is associated not only with employee performance (Huang *et al.,* 2020), but also workplace productivity, and is important in achieving organizational goals (Lotfi *et al.,*2018). Greater commitment to the workplace is a determinant of employees' workplace behaviour (Perreira and Berta 2016) such as the leadership they enact during their roles.

Improving commitment to the workplace of healthcare professionals is an important aspect for improving the performance of the wider healthcare system (Baird *et al.,* 2019). A popular

model of commitment to the workplace is the Meyer and Allen (1997) model. These authors propose three dimensions of commitment: affective commitment, normative commitment, and continuance commitment. Each of the three dimensions reflect distinctive explanations of the psychological state that binds an employee to the organisation (Fernández-Mesa *et al.*, 2020). Improving employee commitment to the workplace is a concern of healthcare employers who wish to retain ANPs.

Commitment to the workplace is important in nursing due to its association with a range of negative organisational outcomes such as reduced care quality, deviation from organisational objectivism as well as increased turnover and absenteeism (Karami *et al.,* 2017). At an individual level, lower levels of commitment to the workplace was associated with lower quality of work and life (Karami *et al.,* 2017). To date there is limited understanding of ANPs' experiences that lead to and sustain their commitment to their workplaces. The satisfaction of worker's basic psychological needs has been theorised to increase their commitment to the workplace (Forner *et al.*, 2020) suggesting that self-determination theory may be a good fit for research investigating commitment to the workplace among ANPs.

1.14.3. Work engagement

Work engagement is concerned with how attached an employee feels about a task independently of how they experience their workplace (Burr *et al.*, 2019), and is a focus of research given its association with employee well-being and work performance (Knight *et al.*, 2017). As outlined by Bakker *et al.,* (2005 pg. 664), work engagement is "a positive, fulfilling, work-related state of mind" experienced by employees driven by vigour, dedication, and absorption in their work (Schaufeli *et al.*, 2002), and by a sense of achievement related to their work (Moreno Cunha *et al.*, 2022). Work engagement has been described as obverse, but distinct from the concept of burnout (Knight *et al.*, 2017).

Previous research in nursing has linked work engagement to a range of patient, staff and organisational outcomes including, quality of care, job satisfaction, collaborative climate and organisational culture (Slåtten *et al.*, 2022). Work engagement is recognised to be one of the key enablers of innovativeness at work through autonomous motivation (Koroglu and Ozmen, 2022). A number of factors such as support from others (Cao and Chen, 2019), feedback

(Möckli *et al.*, 2020), leadership (Wang *et al.*, 2019), workload (van Mol *et al.*, 2018) work autonomy (Fürstenberg *et al.*, 2021; van Dorssen-Boog *et al.*, 2020) and demographic variables (Chaudhary and Rangnekar, 2017) have been shown to influence work engagement. Studies using self-determination theory as a theoretical framework have demonstrated that individuals can satisfy their own psychological needs and enhance their own work engagement by being a leader to others in the work (Zeijen *et al.*, 2020). Satisfaction of basic psychological needs mediated the relationship between leadership and work engagement (Schaufeli 2021).

In this study, work engagement will be measured as an association has been established between the concept and role optimisation in the context of advanced nursing practice (Côté *et al.*, 2019). Furthermore, while the relationship between work engagement has a theorized causal relationship with self-leadership, the association has received little attention to date (Knotts and Houghton, 2021).

1.14.4. Job Satisfaction

Job satisfaction of ANPs has been identified as an important contributor to employee well-being (Hakanen *et al.*, 2018; Puranik *et al.*, 2021) and psychosocial health (Casu *et al.*, 2021). In turn the consequences of poor psychosocial health have a direct effect on the quality of patient care (Franklin and Gkiouleka, 2021; Lejeune *et al.*, 2021).

Steinke *et al.,* (2018) surveyed 1419 NP/APNs across 19 countries to investigate job satisfaction among nurses working at advanced practice level. Using the Misener Nurse Practitioner Job Satisfaction Scale, respondents were asked to rate their job satisfaction. Although the majority (83%) of respondents rated themselves as satisfied with their job, a number of specific elements were highlighted as contributing to role dissatisfaction. These included limitation of the role, the lack of acceptance from other clinicians, and also lack of support from nursing colleagues. A study by Athey *et al.,* (2016) determined that the greatest predictor of ANP job satisfaction was the feeling that their skills were being used. It may therefore be argued that ANPs who are required to work to capacity rather than capability and not explicitly utilise their leadership capabilities (or feel that they can demonstrate leadership) will negatively impact on job satisfaction.

Although there is limited research published on job satisfaction for ANPs, the available evidence indicates some job dissatisfaction (O'Keeffe *et al.,* 2015), and there is some evidence of an emerging disquiet among this group (Anonymous, 2018; Corbally and Lees-Deutsch, 2018). The link between job satisfaction and role identity has been articulated by Pasarón, (2013) who determined that contextual features of the ANP role such as practicing to capacity and not capability, absence of a voice at the policy level and ambiguous and conflicting role expectations were negatively correlated with job satisfaction. Internationally, Fox *et al.,* (2018) caution that excessive restrictions on nurse practitioner service practice and staff isolation may lead to role dissatisfaction and attrition therefore further placing ANP service sustainability at risk. Such ANP service restrictions include policies which permit ANPs to manage only low acuity patients (Lowe *et al.,* 2013; McConnell *et al.,* 2013) which in turn prevents ANPs from working to the fullest extent of their education and expertise which results in working to capacity rather than capability (Fealy *et al.,* 2018; Fox *et al.,* 2018). This is despite evidence of the invisible work been undertaken by ANPs managing care beyond minor illnesses and injuries (Roche *et al.,*2015) providing management and support in complex high-acuity care (Lutze *et al.,* 2018) and an acknowledgement that the potential of nurse practitioner roles rests on an ability to enact the full scope of their role (Kilpatrick, 2013).

1.14.5. Intention to Leave

Intention to leave is a commonly studied phenomenon in nursing (Butler *et al.,*2019; Sharififard *et al.,* 2019; Younis *et al.,* 2021) and refers to an employees' perceived likelihood to leave the organisation or profession shortly (Bigliardi *et al.,*, 2005). Intention to leave has been reported to be the final stage before employees take the initiative to leave (Bigliardi *et al.*, 2005), and is an established direct predictor of actual turnover (Greinacher *et al.*, 2021; Nantsupawat *et al.*, 2017). Intention to leave by nurses is a significant issue for health systems worldwide with studies examining the magnitude of intention to leave finding frequencies of 22.1% (de Oliveira *et al.*, 2017) to 23.7% (Sharififard *et al.*, 2019). Using the lens of self-determination theory, Shim *et al.*, (2021) found that employee's intention to leave was linked to the need for autonomy which is one of the three basic psychological needs of the theory.

There is a need for studies that examine features that may enhance the retention of ANPs as there are currently few studies which describe only nurse practitioners intention to leave their jobs. The majority of studies which sample ANPs do so while researching the concept among

the wider healthcare team (Ho *et al.*, 2021; Linzer *et al.*, 2019; Luo *et al.*, 2022; Norful *et al.*, 2021; Stewart *et al.*, 2020). As discussed in this chapter ANPs are clinicians who occupy a position within the inter-disciplinary team which has been described as tenuous by Thompson and McNamara, (2021). Moreover, facilitating ANPs to explicitly utilise their leadership capabilities and demonstrate leadership may decrease intention to leave in this cohort, as holding a leadership position in nursing has been identified as one factor which is negatively associated with intention to leave (Al Zamel *et al.*, 2020; de Oliveira *et al.*, 2017).

1.17. Inter-Relatedness of the Concepts

The landscape of healthcare is rapidly changing as a result of organisational changes, workforce supply issues, evolving technology and increasing demand for care (Coyne *et al.,*, 2016; Institute of Medicine, 2011). It has been postulated that healthcare staff with developed levels of self-leadership may respond more effectively to such changes in organization structures and environments (Brown and Fields, 2011). A systematic review and meta-analysis on the association of leadership and well-being at work has demonstrated that leadership has the potential to affect variables such as employee job satisfaction, well-being and sickness absence (Goldsby *et al.,*2021). As self-direction and self-influence are key to self-leadership, it may be that those with developed self-leadership skills may be more ready to adapt to omnipresent healthcare change (Dorssen-Boog *et al.*, 2021).

Advanced nurse practitioners are recognised as clinical leaders (Anderson, 2018; Lamb *et al.,* 2018), however to be effective leaders ANPs must first lead themselves (Shek and Leung, 2016). There is an association between self-leadership and a range of work and psychosocial outcomes.

- A number of authors have demonstrated positive associations between self-leadership and work engagement (Breevaart *et al.*, 2016; Dorssen-Boog *et al.*, 2021; Knotts and Houghton, 2021; Kotzé, 2018; van Dorssen-Boog *et al.*, 2020)
- Giving influence to employees by empowering them to lead themselves through behavioural and cognitive strategies is a goal of self-leadership (Amundsen and Martinsen, 2015). Self-leadership is a process through which individuals can self-influence to achieve greater levels of performance and effectiveness, however to date the role self-leadership has in facilitating influence at work has not been explored.

- With regard to commitment to the workplace, greater self-leadership has been posited to enhance team commitment (Shek, 2017). Knotts and Houghton, (2021) found that the positive association between self-leadership and work engagement was partially mediated by affective and normative commitment, but not by continuance commitment.
- Positive effects of self-leadership on job satisfaction have been reported in a number of studies (Ho and Nesbit, 2014; Mayfield *et al.*, 2021; Sesen *et al.*, 2017; Stewart *et al.*, 2011) while conversely Amundsen and Martinsen, (2015) and Konradt *et al.,* (2009) did not find an association between self-leadership and job satisfaction.
- Intent to leave was found to be significantly positively associated with the constructive thought pattern strategies and natural reward strategies of self-leadership in a study by Mayfield *et al.,* (2021), but not with the behaviour focused strategies dimension.

Self-leadership is acknowledged to play an important role in creating healthy work environment (Albert, 2016), and is associated with a range of positive implications for nursing outcomes such as job satisfaction, productivity, retention and turnover (Cummings *et al.*, 2018; Gorman, 2019). By influencing nursing outcomes, leadership practices have been demonstrated to impact patient outcomes (Wong *et al.,* 2013).

Further evidence that leadership factors are an important element of the psychosocial work environment is highlighted in the work of Lundgren *et al.,* (2016) who found that leadership behaviours influenced followers assessment of their psychosocial work environment. Moreover, there is an established association between self-leadership behaviours and a range of work outcomes (Ho and Nesbit, 2014). Indeed self-leadership has been demonstrated to positively correlate with employee adaptive performance and job satisfaction (Marques-Quinteiro *et al.*, 2019). It is known that organisational factors such as lack of autonomy and lack of decision making ability are impediments to the ANP role and are associated with decreased job satisfaction (Motley *et al.,*2016).

1.18. Purpose of the Study

ANPs are recognised as clinical leaders, and in turn leadership factors are an important element of the psychosocial work environment (i.e., the interpersonal and social interactions which influence behaviour and development in the workplace). Self-leadership is an important pre-requisite enabling ANPs to act as effective clinical leaders to others. Moreover, there is an association between self-leadership and a range of psychosocial outcomes including commitment to the workplace, work engagement and influence at work, job satisfaction and intention to leave. The purpose of this cross-sectional, quantitative study was to examine the relationship among self-leadership strategies of ANPs as measured by the revised self-leadership questionnaire and a range of work and psychosocial outcomes.

1.19. Research Question

What is the relationship between ANPs' self-leadership and commitment to the workplace, work engagement, influence at work, job satisfaction, and intention to leave?

The research hypotheses are:

H1: There is a relationship between ANPs' self-leadership and demographic and work factors.

H2: There is a relationship between ANPs' self-leadership and psychosocial job characteristics.

These hypotheses will be answered by the following research questions:

1. Is there a relationship between Self-Leadership and Commitment to the Workplace for ANPs?
2. Is there a relationship between Self-Leadership and Work Engagement for ANPs?
3. Is there a relationship between Self-Leadership and Influence at Work for ANPs?
4. Is there a relationship between Self-Leadership and Job Satisfaction for ANPs?
5. Is there a relationship between Self-Leadership and Intention to Leave for ANPs?

1.20. Chapter Summary

There is robust evidence of the importance of self-leadership in nursing advanced practice roles, and of the association between nurses leadership and the creation of healthy work environments (Albert, 2016). Research has also suggested that there is an association between self-leadership and a range of nursing outcomes including job satisfaction, work engagement, commitment to the workplace, influence at work, intention to leave. However, ANPs are recognised as informal leaders who empower others and drive innovations in care, but occupy a tenuous organisational position. Therefore, there is a need for further research which examines the leadership role of ANPs, in particular how ANPs lead themselves, but also how ANPs lead others in the clinical environment.

1.21. Organisation of the Remainder of the Thesis

The remainder of this thesis is structured as follows:

This chapter has provided an overview of the contextual factors related to ANP development in Ireland and emphasised ANP leadership as an important but understudied concept in advanced practice. Practicing in a 'third space' increases the need to explore how ANPs perform their work, and this chapter has also introduced a range of psychosocial variables which shall form an integral part of this study.

In Chapter 2 a systematic scoping review is presented which identifies and maps the available evidence in relation to the impact of clinical leadership in advance practice roles on outcomes in healthcare. This systematic scoping review was published in the Journal of Nursing Management (Duignan *et al.*, 2021).

Chapter 3 describes the methodological framework for this study examining the self-leadership skills, behaviours and cognitions of ANPs. This chapter also describes the steps taken to determine whether a relationship existed between self-leadership capacity and psychosocial outcomes such as commitment to the workplace, work engagement, influence at work, job satisfaction and intention to leave. The chapter includes information on the research design,

data collection, sample description, method of analysis and ethical issues. Chapter 3 also provides the results of a confirmatory factor analysis conducted to verify the factor structure of the Revised Self-Leadership Questionnaire (Houghton and Neck, 2002).

The findings from the study are presented in Chapter 4. Specifically the findings are detailed as they relate to the research question which guided this study: what is the relationship between ANPs' self-leadership and commitment to the workplace, work engagement, influence at work, job satisfaction, and intention to leave?

In Chapter 5 the study's findings are discussed in detail, with social determination theory used to expose subtleties of the extent to which ANPs psychological needs are met. There is a specific focus on discussing the findings which relate to the research questions posed in Chapter 3. The recommendations for practice, the organisation and research are detailed regarding the challenge of addressing ANP leadership as well as the study strengths and limitations. Chapter 5 also includes the study's conclusions.

Chapter 2: Impact of Clinical Leadership in Advanced Practice Roles on Outcomes in healthcare: A Scoping Review

2.1. Introduction

This chapter presents the impetus, methods, results and importance of a scoping review which was conducted to examine the literature exploring the enactment of clinical leadership in advanced practice roles in relation to patient, staff and organisational outcomes. This scoping review was published in the Journal of Nursing Management (Duignan *et al.* 2021) (see Appendix 2).

2.2. Background

The impact of clinical leadership on healthcare outcomes has gained increasing interest in health systems worldwide (Mianda and Voce, 2018), not least in the area of advanced practice (Lamb *et al*, 2018). In nursing and in other health professions, Advanced practitioners (APs) are increasingly identified as clinical leaders who have progressed into areas of higher level practice improving care quality and outcomes (Evans *et al.*, 2020; Leggat *et al.*, 2015; Milner & Snaith, 2017; Thompson *et al.*, 2019). Whilst there is an established association between leadership traits of managers and a range of patient, staff and organisational outcomes within health services in general (Cummings *et al.*, 2018; West *et al.*, 2015), demonstrating the impact of clinical leadership on outcomes remains challenging. Examples of objective patient related outcomes associated with leadership are measures such as 30-day mortality, patient safety, hospital-acquired injuries, patient satisfaction, physical restraint use, and pain management (Sfantou *et al.*, 2017). It has been identified that there is a relationship between leadership and staff related outcomes such as job satisfaction, organisational commitment and increased retention and between leadership and organisation related outcomes such as organisational commitment, incidence of complaints, organisational readiness, and performance measurement (Sfantou *et al.*, 2017). However, there is a need to evaluate the extent to which this evidence is specific to the expression of clinical leadership by APs.

Clinical leadership contribution to the provision of safe and efficient care has been highlighted in governmental reports (Francis, 2013; Keogh, 2013; Kirkup, 2015) and in the academic literature (Jonas *et al.*, 2011; Mianda and Voce, 2018). While there is consensus as to the importance of clinical leadership, there is less agreement on a clear definition of the concept. Nevertheless, common characteristics identified include: clinical embeddedness, expertise, visibility within care environments, role modelling, facilitation of care, working within and across professional boundaries and a concern with improving care quality (Elliott *et al.*, 2013; Giles *et al.*, 2018; Santiano *et al.*, 2009; Walsh *et al.*, 2015). In a report evaluating Advanced Nurse Practitioner (ANP) roles within nursing, the SCAPE report (NCNM, 2010) suggested a number of activities that give expression to clinical leadership (Table 4).

Table 4: Activities which give expression to clinical leadership

- Active membership of the multidisciplinary team
- Active membership of committees with responsibility for policy, practice and guideline development
- Initiating and improving patient/client care through service development
- Influencing clinical practice through formal and informal education, mentoring, and coaching the multidisciplinary team
- Influencing clinical practice through positive role modelling of autonomous clinical decision making and ongoing professional development for the multidisciplinary team.

A widely cited definition is that of Jonas *et al.*, (2011: 1) who define clinical leadership as:

> The concept of clinical healthcare staff undertaking the roles of leadership: setting, inspiring and promoting values and vision, and using their clinical experience and skills to ensure the needs of the patient are the central focus to the organisation's aims and delivery.

The need to foster clinical leadership development has been embedded into health policy in a number of jurisdictions including the United Kingdom (National Health Service, 2019), the Republic of Ireland (Fealy *et al.*, 2015) and Australia (Pizzirani *et al.*, 2020) where the need for training and development in clinical leadership for the health workforce has been emphasised to produce effective improvements in care quality and outcomes. Clinical leadership has also been promoted as a keystone component of advanced practice roles in healthcare, where it has been identified as a significant enabler of the role (Walsh *et al.*, 2015);

however, it remains unclear how clinical leadership is specifically measured in advanced practice roles.

Therefore, a scoping review was conducted to develop an understanding of the impact of clinical leadership in practice, as such reviews are exploratory and systematically sift through available literature on a particular subject (Anderson *et al.*, 2008). This review will synthesise the available evidence on how clinical leadership is enacted by APs in relation to patient, staff and organisational outcomes.

2.3. Aim

The aim of this scoping review was to examine the literature exploring the enactment of clinical leadership in advanced practice roles in relation to patient, staff and organisational outcomes. Enactment of clinical leadership in AP practice was defined as those activities which give expression to clinical leadership reported in the SCAPE report (NCNM, 2010).

2.4. Methods

To prevent redundancy and duplication of effort, a protocol search was performed using two registers of systematic reviews; the international prospective register of systematic reviews (PROSPERO) and the *C*ochrane Database of Systematic Reviews (CDSR). No reviews matched 'clinical leadership' in title or abstract. The guidelines from Arksey & O'Malley, (2005) for conducting scoping reviews was used. The search strategy for this literature review was guided by the protocol outlined by Aromataris & Riitano, (2014) which provides stepwise guidance on developing a search strategy.

2.5. Eligibility Criteria

Inclusion criteria were: primary studies; conducted in any of the 36 OECD member countries listed as of August 2019 (https://www.oecd.org/about/members-and-partners/); published between 2009 and 2019; and reporting on outcomes from clinical leadership among healthcare professionals working in advanced clinical practice roles. Only the 36 OECD countries were included as eligible study settings as clinical leadership development is not well established in lower income countries (Mianda and Voce, 2018). The date range was guided by the emergence of values based leadership styles such as clinical leadership in the literature which has occurred over the past decade in response to moral and ethical deficiencies in organisational leadership

(Copeland, 2014). Excluded were studies published in a language other than English, as well as editorials, notes, letters, unpublished theses, discussion papers, reviews and single case reports.

2.6. Databases

The following databases were searched: SCOPUS, PubMed, Psychinfo and Cinahl plus (via EBSCO Databases) and Web of Science. A search strategy was developed which combined key terms using a series of free text terms and MeSH terms for Advanced Practice AND clinical leadership (Appendix 3). Boolean operators and appropriate "wild cards" were used to account for plurals, and variations in databases and spelling. The PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation guided the review (Appendix 4 - PRISMA ScR Checklist).

2.7. Review Process and Extraction

An initial identification and screening of titles and abstracts was independently performed by two authors (MD and VMC) against predefined inclusion and exclusion criteria. These two authors subsequently reviewed the full texts against the same criteria. Conflicts between reviewers were resolved by consensus and the input of the third author (JD). Peters *et al.*, (2015) suggests that no assessment of study quality is necessary for scoping reviews, however this step was included to add rigour to this review. Three articles were appraised using the checklist for case series, and three articles using the checklist for qualitative research. One article was appraised using the checklist for analytical cross sectional studies. Articles were included if they scored Yes to 4 or more questions (Table 5). The three studies which used case study approach were unclear if all they achieved consecutive or complete inclusion of ANPs in a particular case were included (Begley et al., 2013a; Coyne et al., 2016b; Elliott et al., 2013). There were three articles which used qualitative methodologies in the review, and these lacked rigour around clear reporting of the influence of the researcher on the research, and vice-versa (Giles et al., 2018c; Santiano et al., 2009; Walsh et al., 2015). The majority of sources of evidence were low level evidence, predominantly case series and poorly generalisable research methods.

Data synthesis was undertaken in three stages: (1) evidence extraction and mapping, (2) identification of evidence gaps and (3) a narrative synthesis of selected research areas. A single author (MD) extracted and mapped the data from included studies according to a specifically designed data extraction table (Table 5), while a second author (VMC) checked the extracted data. Double extraction is generally not required in scoping reviews (Powell *et al.*, 2019).

The data extracted included: author, year, country, data collection methods, study population and relevance to the aim. Additionally, data were extracted on the following factors: study design, geographic region and setting. The identified papers were explored using tabulation of findings and narrative synthesis to identify the key concepts (Table 5). The narrative descriptive synthesis was conducted for primary qualitative, quantitative and mixed methods studies meeting the inclusion criteria.

Table 5: Critical appraisal of included studies

First Author and date	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
JBI Critical Appraisal for Case Series										
Begley *et al.* (2013)	Y	Y	NA	U	U	N	NA	Y	Y	NA
Coyne *et al.* (2016)	Y	Y	Y	U	U	NA	Y	Y	Y	NA
Elliott *et al.* (2013)	Y	Y	Y	N	U	NA	Y	Y	Y	NA
JBI Critical Appraisal for Qualitative Research										
Giles *et al.* (2018)	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Santiano *et al.* (2009)	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Walsh *et al.* (2015)	Y	Y	Y	Y	Y	U	N	Y	Y	Y
JBI Critical Appraisal for Analytical Cross Sectional Studies										
Van Hecke *et al.* (2019)	Y	Y	N	Y	Y	Y	N	Y		

Y= Yes, N= No, U=Unclear, NA= Not applicable

2.8. Results

A total of 765 articles were retrieved and initially screened, with an additional six articles retrieved from hand searching. After removing duplicates and studies judged to be non-relevant, 57 papers were identified for full text review and seven met the review eligibility criteria. The primary reason articles were excluded was that they did not address the review question (Fig. 3).

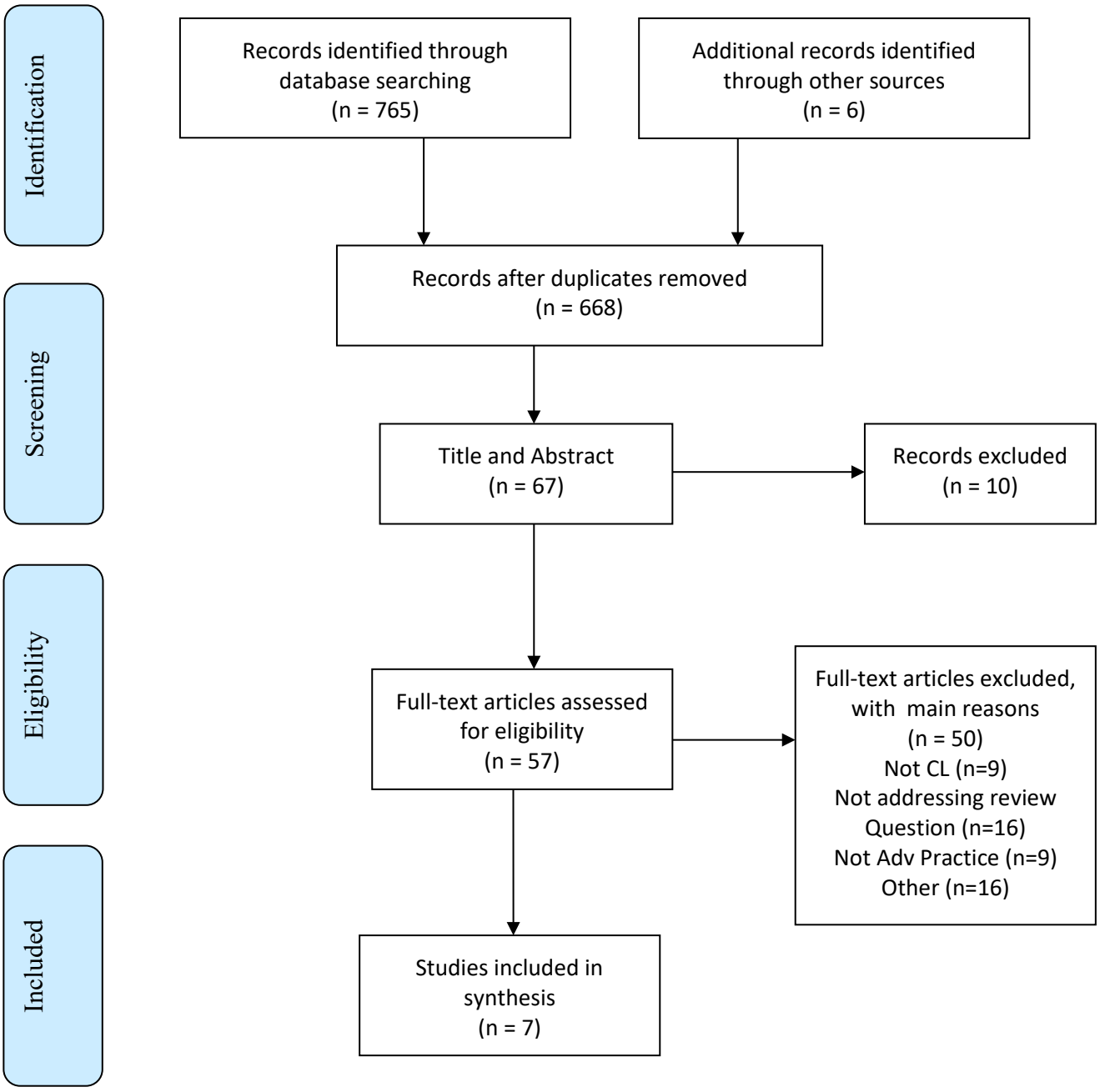


Figure 3: PRISMA 2009 Flow Diagram for ANPs clinical leadership scoping review

The reviewed studies were conducted in three countries: Ireland (Begley et al., 2013b; Coyne et al., 2016a; Elliott et al., 2013), Australia (Giles *et al.*, 2018; Santiano *et al.*, 2009; Walsh *et al.*, 2015) and Belgium (Van Hecke *et al.*, 2019) (Table 5). No studies from the remaining 33 OECD countries were found in the defined time frame. Included studies were conducted in both acute and community settings (Begley *et al.*, 2013; Coyne *et al.*, 2016; Elliott *et al.*, 2013; Giles *et al.*, 2018) or involved both university and non-university hospitals (Van Hecke *et al.*, 2019). Most studies were either qualitative (Coyne *et al.*, 2016; Elliott *et al.*, 2013; Santiano *et al.*, 2009; Walsh *et al.*, 2015) and/or of mixed methods design (Begley *et al.*, 2013; Giles *et al.*, 2018) with one using a quantitative approach (Van Hecke *et al.*, 2019). Different nomenclature was used to describe ANP roles in the included studies (Table 6).

Table 6: Data Extraction Table

Author, year & Country of study	**Research question or study aim**	**Research design**	**Data collection including research instruments**	**Study population**	**How Clinical Leadership was expressed**	**Comments**
Begley et al 2013 Ireland	"To compare the roles, responsibilities, and perceived outcomes of Clinical Nurse Specialists, Clinical Midwife Specialists, and Advanced Nurse Practitioners in Ireland" (pg 1324)	Mixed-method case-study	non-participant observation (92 hours) of 23 Clinical Specialists and Advanced Practitioners, documentary evidence (audit, diaries, work programmes), interviews, questionnaire (developed for this study)	n=21 clinicians n=13 Directors of Nursing or Midwifery n=154 service-users Acute and Community	Staff: Acted as a resource within the MDT (Qual) Organisation sat on committees, participant in policy development and took part in service planning (Qual)	
Coyne et al 2016 Ireland	"1. To explore the provision of care received in sites with CS and AP and without from the perspective of service users, clinicians and decision makers. 2. To explore clinicians' perceptions of care given to service users in sites with and without accredited clinical specialist and advanced	Multiple case study	Interviews	n=23 Directors of Nursing and Midwifery n=41 healthcare professionals n=41 service users/ family members/ carers n=23 Postholders (CNS/ ANP) n=23 Non-postholders (nurses, midwives or doctors) Acute, community and residential sites	Patient: Facilitates access to services Staff: Mentors and acts as a resource to other staff. Works across boundaries with MDT Organisation: Involvement in policy and guideline development. Provide leadership in clinical practice. Perceived to reduce readmission rates. Documentary evidence of a reduction in waiting times in ED and colposcopy	Participants promoted interprofessional team working and smoothed transition of patients/ clients through the healthcare system

Table 6: Data Extraction

Author, year & Country of study	Research question or study aim	Research design	Data collection including research instruments	Study population	How Clinical Leadership was expressed	Comments
	practitioner postholders". (pg. 3)					
Elliott et al 2013 Ireland	"To report a case study that identifies how leadership is enacted by advanced practitioners in nursing and midwifery and differentiates between clinical and professional leadership in advanced practice" (pg. 1039)	Multiple case study methodology	non-participant observation, interviews, and the collection of on-site written records	n=23 CS/APs across 28 health service provider sites	Patient: Introduces and develops patient/client care services Staff: Mentors and educates the MDT ANPs guides and co-ordinates The MDT, Acts as a positive role model for autonomous clinical decision-making and ongoing professional development Organisational: initiates practice change, takes responsibility for policy and guideline development and implementation, involved in service planning, Changes clinical practice through formal education of MDT	Seven key activities that indicated clinical leadership were identified
Giles et al 2018 Australia	"To provide understanding of the nature of CL in the nurse consultant role by describing how it is enacted by NCs, how key stakeholders perceive its impact within the role and what elements influence NCs	Qualitative findings from a larger sequential mixed-method study	Sequential mixed-method design. Used online survey, online discussion forum and stakeholder focus groups	n=2 nurse consultants (n=26), managers (n-20),other stakeholders (n=16) Acute, Primary and community care settings	Patient: Care coordination Staff: Act as a resource. CNCs are the 'go to person' Organisational: Trans-boundary working. Enhance service quality, act as change agents	As clinical leaders nurse consultants were found to facilitate care, work across boundaries, provide education, mentor colleagues, coordinate care and change practice

Table 6: Data Extraction

Author, year & Country of study	Research question or study aim	Research design	Data collection including research instruments	Study population	How Clinical Leadership was expressed	Comments
	effectiveness as clinical leaders". (pg. 1983)					
Santiano et al 2009 Australia	"To explore how CNCs who provide hospital wide support after hours (AHCSs) construct their role" (pg. 87)	Ethnographic study	Videoing of CNC work and Semi structured interviews	n=2 clinical nurse consultant providing after hours clinical support	Patient: moderates the influence of the social determinants of health on patients and populations Staff: promote MDT clinical partnerships Organisation: Influences healthcare policy and practice	Found that CNC acted as clinical leaders by influencing and progressing clinical care, policy and collaboration through all levels of the health service
Van Hecke et al 2019 Belgium	"to explore the practice profile and competencies of advanced practice nurses (APNs) and midwives (AMPs), and factors associated with task non-execution" (pg. 1261)	Quantitative cross-sectional study	Questionnaire	n=63 All APN and AMPs working in a region of Belgium were sampled	Patient Initiate, implement and evaluate QI initiatives Staff Mentor students. Translate theory into clinical practice Organisation Guideline and care protocol development Policy development . Involved in change management and innovation	
Walsh et al 2015 Australia	"The aim of this research project was to investigate the role of the Clinical nurse consultant (CNC) from the multiple perspectives of CNCs and other stakeholders who work with CNC" (pg. 172)	Inductive, participatory, and qualitatively descriptive	Cooperative research, situational analysis, one-to-one interviews, focus groups, reflective techniques	n=103 CNC One clinical stream in a local health district	Patient: Stakeholders opined that specialist knowledge allowed CNC to advocate for patients thereby improving outcomes Staff: CNCs mentor and educate staff Organisation: CNC viewed as spinners, interweaving services and connecting parts of care and care delivery	Found that clinical leadership was core to the CNC role. Manifested as CNCs' way of working with health professionals, managing professional agency, and weaving a dance between providing support and enabling others

Table 7: Characteristics of selected studies included in the Scoping Review

Category	Details	Total
Design of studies	Qualitative (Coyne *et al.*, 2016; Elliott *et al.*, 2013; Santiano *et al.*, 2009; Walsh *et al.*, 2015)	4
	Quantitative (Van Hecke *et al.*, 2019)	1
	Mixed Methods (Begley *et al.*, 2013; Giles *et al.*, 2018)	2
Geographic Location OCED	Australia (Giles *et al.*, 2018, Santiano *et al.*, 2009; Walsh *et al.*, 2015)	3
	Ireland (Begley *et al.*, 2013, Coyne *et al.*, 2016, Elliott *et al.*, 2013)	3
	Belgium (Van Hecke *et al.*, 2019)	1
Settings	Acute & Community (Begley *et al.*, 2013; Coyne *et al.*, 2016; Elliott *et al.*, 2013; Giles *et al.*, 2018)	4
	Acute Only (Walsh *et al.*, 2015, Santiano *et al.*, 2009)	2
	University and non-university hospitals (Van Hecke *et al.*, 2019)	1
Study Participants	Multiple stakeholders (excluding Service Users) (Elliott *et al.*, 2013; Giles *et al.*, 2018, Walsh *et al.*, 2015)	3
	Multiple stakeholders (including Service Users) (Begley *et al.*, 2013; Coyne *et al.*, 2016)	2
	Advanced Practitioners Only (Santiano *et al.*, 2009, Van Hecke *et al.*, 2019)	2
Nomenclature Used	Clinical specialist/advanced practitioners (Begley *et al.*, 2013; Coyne *et al.*, 2016; Elliott *et al.*, 2013)	3
	Nurse Consultants (Giles *et al.*, 2018)	1
	Clinical Nurse Consultants (Walsh *et al.*, 2015, Santiano *et al.*, 2009)	2
	Advanced practice nurses and midwives (Van Hecke *et al.*, 2019)	1

2.8.1. Advanced Practitioners

Despite all advanced healthcare practitioners (nurses and allied health professions) being included in the search criteria, no studies were found which examined clinical leadership in advanced roles in healthcare professions other than nursing. Therefore only studies involving the clinical leadership role of nurses working in advanced practice roles were identified. The majority of the studies sampled a range of other health professionals in addition to ANPs in identifying the clinical leadership role of ANPs (Begley et al., 2013b; Coyne et al., 2016a; Walsh et al., 2015). Several studies aimed to investigate and understand the various roles and clinical services provided by APs (Begley *et al.*, 2013; Coyne *et al.*, 2016; Giles *et al.*, 2018; Santiano *et al.*, 2009), with other studies specifically aiming to identify (Elliott *et al.*, 2013), investigate (Van Hecke *et al.*, 2019) and provide understanding (Giles *et al.*, 2018) of the leadership capabilities of such roles.

It was evident from the included studies that a range of titles were used to describe nurses working in advanced practice roles. Clinical nurse consultant was the title used in Australian studies (Giles *et al.*, 2018; Santiano *et al.*, 2009; Walsh *et al.*, 2015), while in the Belgian study the title advanced practice nurse was preferred (Van Hecke *et al.*, 2019). Among papers published from the SCAPE report in Ireland, the titles clinical nurse specialist, clinical midwife specialist and advanced nurse practitioner were used (Begley et al., 2013b; Elliott et al., 2013). It has been acknowledged that the confusion created by such variation in titles and lack of role clarity has exacerbated the difficulty in measuring the impact of clinical leadership and its contribution to patient, staff and organisational outcomes (Giles *et al.*, 2018).

2.8.2. Measurement of clinical leadership

Two studies used quantitative instruments as part of their research measuring role integration, the potential impact of the AP role in health services, and selected outcomes. As part of Begley et al's., (2013) study, a questionnaire was used to measure service users' experiences of various aspects of their care. Van Hecke *et al.*, (2019) explored clinical/professional leadership as one aspect of a wider suite of advanced practitioner tasks and competencies. However, none of the instruments in the papers reviewed solely measured clinical leadership from the perspective of the ANPs or other key stakeholders.

A number of studies (both qualitative and quantitative), reported on the opinions and/or perceptions of research participants or examined ANPs task performance (these included ANPs and other healthcare professionals) (Giles *et al.*, 2018; Van Hecke *et al.*, 2019; Walsh *et al.*, 2015), rather than measuring the impact of clinical leadership on outcomes. Two studies reviewed highlighted the importance of clinical leadership to advanced practice roles and the positive influence of clinical leadership on patient, staff and organisational outcomes (Giles *et al.*, 2018; Walsh *et al.*, 2015). However, despite studies highlighting clinical leadership as a central tenet of the role, no objective evidence was presented to identify the extent to which this occurred in practice (Begley et al., 2013b; Elliott et al., 2013; Santiano et al., 2009) with it being suggested that a lag in service and organizational responsiveness inhibited APs' ability to enact their clinical leadership role (Giles *et al.*, 2018).

2.8.2.1. Patient Related Outcomes

A number of studies highlighted that APs improved outcomes for patients by collaborating with and co-ordinating the multidisciplinary team and facilitating continuity of care (Begley et al., 2013b; Coyne et al., 2016a; Elliott et al., 2013; Higgins et al., 2014; Santiano et al., 2009; Walsh et al., 2015). Some studies showed evidence that APs' clinical leadership role improved access to care for patients, patient satisfaction and waiting times, and developed services in response to patient need (Coyne *et al.*, 2016; Elliott *et al.*, 2013; Walsh *et al.*, 2015) with stakeholders reporting that APs' clinical leadership resulted in quality clinical care (Giles et al 2018). It was also found that APs in their clinical leadership role influenced clinical practice, but this was primarily by mentoring and educating other colleagues rather than exerting a direct impact on patient outcomes. Both Begley *et al.*, (2013) and Santiano *et al.*, (2009) found that APs contributed to optimised patient outcomes by establishing, educating, mentoring and leading in effective relationships within the interdisciplinary team.

2.8.2.2. Staff Related Outcomes

A number of studies highlighted that APs as clinical leaders acted as a resource for staff providing clinical expertise offering education, mentoring and coaching within inter-disciplinary teams (Begley *et al.*, 2013; Coyne *et al.*, 2016; Elliott *et al.*, 2013; Giles *et al.*, 2018; Van Hecke *et al.*, 2019; Walsh *et al.*, 2015). This included APs acting as a mentor for

disciplines outside of their own professional group (Begley *et al.*, 2013; Elliott *et al.*, 2013; Giles *et al.*, 2018; Higgins *et al.*, 2014; Santiano *et al.*, 2009). In addition, Giles *et al.*, (2018) highlighted that APs enacted clinical leadership through their role as a collaborator across professional boundaries (clinicians, managers and senior medical colleagues) through the coordination and management of complex patient cases.

Despite this, none of the studies established a relationship between AP clinical leadership enactment and commonly measured staff outcomes such as job satisfaction, organisational commitment or increased retention. Moreover, the studies reviewed reported outcomes for members of the interdisciplinary team who were within the APs' sphere of influence rather than outcomes for the AP themselves.

2.8.2.3. Organisational Related Outcomes

Contributing to organisational outcomes through service planning as well as updating organisational guidelines and protocols by APs was reported by Elliott *et al.*, (2013). Giles *et al.*, (2018) also found that the APs provided a link between managerial decision making and the clinical level enactment of strategic initiatives. Furthermore, the positioning of APs providing clinical leadership to influence organisational outcomes was highlighted in a number of studies (Elliott *et al.*, 2013; Giles *et al.*, 2018; Walsh *et al.*, 2015). Nevertheless, it was identified that APs required role flexibility to respond and optimise their clinical leadership capacity to influence strategic organisational goals (Giles *et al.*, 2018; Santiano *et al.*, 2009).

2.9. Discussion

As far as the authors are aware, this is the first scoping review conducted on outcomes associated with clinical leadership in advanced practice roles. Literature was identified that focused on clinical leadership in AP roles; however, no objective evidence of the impact of this aspect of APs' role on patient, staff or organisational outcomes was identified.

A number of studies highlighted that clinical leadership was important to a range of outcomes; in particular in achieving optimal health outcomes for patients. A number of studies reviewed reported that the clinical leadership role of APs positively impacted on patient, staff and organisational outcomes by reducing care fragmentation and spanning professional boundaries

to achieve increased integration of care (Coyne *et al.*, 2016; Elliott *et al.*, 2013; Giles *et al.*, 2018; Santiano *et al.*, 2009; Walsh *et al.*, 2015). Participants in Van Hecke et al (2019) expressed clinical leadership predominantly through care guideline and policy development as well as networking with other APs. However, the evidence presented relating to an association between these activities and outcomes was weak. The majority of studies had relatively small sample sizes and based this conclusion primarily on data which was not amenable to measurement. For example, both Coyne *et al.*, (2016) and Santiano *et al.*, (2009) used a structured observation schedule to determine outcomes, which may raise questions regarding the validly of findings especially when participants know that they are being observed (Hackshaw, 2015). The perspectives of key stakeholders in addition to APs (Elliott *et al.*, 2013; Giles *et al.*, 2018; Walsh *et al.*, 2015) or APs alone (Van Hecke *et al.*, 2019) were used to establish a relationship between AP clinical leadership activities and outcomes. The perspectives of stakeholders may be problematic as research has found that stakeholders, such as those sampled in the reviewed papers, often lack understanding regarding advanced practice roles (Giles *et al.*, 2018; Steinke *et al.*, 2018). Moreover, while the perspectives of stakeholders and APs contribute to understanding of the leadership role of APs, they lack tangibility and are not amenable to measurement. With respect to staff outcomes, a prominent finding from this review is that the majority of studies reviewed reported on the impact of APs clinical leadership with respect to their clinical colleagues who benefited from mentoring and education by the APs. This contribution to the learning and development of the MDT often occurred on an informal basis (Begley *et al.*, 2013; Elliott *et al.*, 2013) adding to the challenge of establishing a link between this clinical leadership activity and staff outcomes. Staff outcomes for APs were not addressed so it is unknown if there is an association between clinical leadership and APs' job satisfaction, organisational commitment or intention to leave for example.

Clinical leadership has been identified as a key element in the role of APs; however, the extent to which this is operationalised is debateable (Lamb *et al.*, 2018). Moreover, the informal nature of this leadership role may be contributing to a situation where APs are absent from involvement in health policy making (Denker *et al.*, 2015) and where there is an absence of interventions to sustain leadership among APs (Bressan *et al.*, 2016). The absence of enabling structures and processes which prioritize clinical care delivery over other AP sub-roles (Higgins *et al.*, 2014; Walsh *et al.*, 2015) decreases the visibility of AP led care and leads to challenges in measuring their unique contribution.

In this review, six of the seven studies originated from Ireland or Australia where there are consistencies in the advanced practice models insofar as APs in both jurisdictions practice autonomously, are educated to master's level and have highly developed knowledge, attitudes and advanced skills which they apply in a specific area of practice (Begley et al., 2013b; Lowe et al., 2013). The lack of consensus of titles related to the role may confuse and undermine confidence in advanced practice roles, act as an obstacle to role progression, and may undermine an attempt to measure the impact of clinical leadership among APs (Thompson & Astin, 2019). The variety of titles used thus complicates the interpretation and synthesis of the study findings.

Many studies in this review reported different conceptualizations of clinical leadership. The studies which conceptualized clinical leadership as occurring at the clinical interface (Begley et al., 2013b; Coyne et al., 2016a; Elliott et al., 2013) may reasonably be expected to find different outcomes to clinical leadership enactment by APs functioning at a more strategic level where their role involves critical appraisal of service delivery, informing policy and education (Giles *et al.*, 2018; Santiano *et al.*, 2009).

Despite all advanced healthcare practitioners being included in the search criteria, only studies involving nurses working in advanced practice roles were identified. This may be reflective of the nursing focus on advanced practice (Thoun, 2011) but may also reflect a difficulty in broadening the scope of practice of other healthcare roles to advanced practice level (Snaith *et al.*, 2019), which has resulted in a lack of clinical leadership research among non-nursing disciplines.

2.10. Strengths and Methodological Limitations

Among the main strengths of this review were the systematic approach and the adoption of a reproducible method. Unambiguous search terms were used and were adapted to meet the specific requirements of the five databases searched. Only studies published in the English language from the 36 OECD member countries were included. This risked excluding studies from middle- and low-income countries. The geographical concentration of studies may limit the transferability of study findings to other healthcare systems as leadership tends to be context specific.

To minimise the possibility of selection bias, the procedures for selecting studies detailed in the methods were rigorously adhered to. Limiting the review to papers published in the English language may have caused an incomplete overview of the relevant studies.

2.11. Conclusion

The association between clinical leadership in advanced practice and patient, staff or organizational outcomes has not, to date, been substantiated with robust evidence. This review illustrated that APs are valued in the clinical environment as a source of expertise and as clinicians concerned with improving care quality. However, leadership at the clinical interface is insufficient in facilitating APs to practice to capability. Efforts to encourage APs to be more closely involved in healthcare leadership at an organizational level should be encouraged. The benefits of this involvement should be clearly presented in an objective manner allowing clear demonstration of APs conducting clinical leadership activities for the enhancement of patient, staff and organizational outcomes.

2.12. Implications for Nursing Management

Arising from this review, nurse managers need to maximise the leadership contribution of APs by involving them in strategic leadership teams to ensure that their expertise effectively impacts on longer-term patterns of service delivery and ultimately on patient, staff and organisational outcomes. The importance of clinical leadership in healthcare has been well described, and a positive association between effective clinical leadership and improved care has been identified (Giles *et al.*, 2018; Swanwick and McKimm, 2012). While advocated at a policy level, clinical leadership may not be positioned as an important part of the role at an operational level and consequently an important finding from this review is that APs require support from nurse managers to formalise involvement in activities that give expression to clinical leadership.

Chapter 3: Methods

3.1. Introduction

The purpose of this cross-sectional, quantitative study was to examine the self-leadership skills, behaviours and cognitions of ANPs working in the Irish health service and determine whether a relationship existed between self-leadership capacity and psychosocial outcomes such as commitment to the workplace, work engagement, influence at work, job satisfaction and intention to leave.

The methods used to conduct the study will be detailed in this chapter. The research design, ethical considerations, methods for sample selection, data collection and analysis of results are also outlined. Details of confirmatory factor analysis conducted to further examine the factor structure of the Revised Self-Leadership Questionnaire (RSLQ) will also be presented.

3.2. Research Method and Design

The research design must be of sufficient scientific merit to answer, robustly, the main research question, while reducing ambiguities such as bias (Lane, 2018), and at the same time be coherent and fit for purpose (Denscombe, 2010). The research design is essentially the blueprint or plan that will be used by researchers to answer a specific research question (Bhattacherjee, 2012; Bloomfield and Fisher, 2019). To meet the aims and objectives of the study it is important that the researcher selects the most appropriate design for achieving the aims of the study (Parahoo 2006).

The quantitative design arises from a philosophical paradigm which views human phenomena as being conducive to objective study, in particular, to measurement. It has been postulated that without accurate and precise measurement it is impossible to understand the nature of those things we wish to study and by extension cannot control those things for the benefit of improving healthcare and society (Strickland 1993). Taking these principles into consideration, a cross-sectional descriptive design was selected to explore the association between self-leadership capacity and characteristics of work including: commitment to the workplace; work engagement; influence at work; job satisfaction and intention to leave. This

type of study generate hypotheses which may be answered by cohort studies (Sedgwick, 2014; Tripepi *et al.*, 2017). Cross-sectional designs are particularly useful for estimating the prevalence of a behaviour in a population such as self-leadership among ANPs (Sedgwick, 2014). The most common cited disadvantages of cross-sectional designs are common method variance (i.e. creation of shared variance due to the method used which may result in the estimated relationship between constructs being inflated) and that the method does not allow causation to be determined only the degree of relationship between variables (Spector, 2019; Steinberg and Price, 2020). Since this is a nascent area of ANP research, a cross-sectional design is appropriate for helping to gain an understanding of the relationships between the variables at a single point in time (Bernard, 2013; Polit and Beck, 2015). Descriptive studies have an important role in nursing research and have greatly increased our knowledge about what happens in the clinical environment. Descriptive designs identify challenges that actually exist, and the descriptive cross-sectional design is appropriate to research areas such as self-leadership among ANP's in which there is little or no previous research completed (Spector, 2019).

Surveys are also useful for testing links between variables of interest (Dillman *et al.*, 2014, McLaren, 2013; Siedlecki, 2020). In this study survey measures will allow the researcher to explain features of a group of ANPs (Blackstone, 2014; Hui *et al.*, 2019; Siedlecki *et al.*, 2015) and describe and explore their self-leadership behaviour (Ponto, 2015). Some advantages of a cross-sectional study design are that the researcher is able to distribute the survey to a large sample, the survey can be self-administered (completed by the respondents), the dissemination is frequently inexpensive, and surveys facilitate confidentiality (Jones *et al.*, 2013; Murdoch *et al.*, 2014). In addition, as the questions are pre-determined comparable information can be obtained from every person who responds due to the standardised format (Hedges, 2015). In this study this method was selected because of its usefulness in determining statistical relationships between previously defined variables (Bernard, 2013). Babbie, (2015) suggests that a quantitative approach is a good fit where clearly defined variables can be measured using existing instruments. Section 3.8 will provide detail on each the variables in this study and how these variables can be measured using existing instruments.

The interaction between individual and organization is important in the construction of psychologically healthy workplace environment (Biggio and Cortese, 2013). Therefore, gathering information at the individual level and understanding the relationships between

psychosocial variables is crucial (Burke and Richardsen, 2019). Information gleaned from nurses' perceptions of the psychosocial factors at work can allow for improvements to the quality of care and safety climate; which are especially important at this time of global nursing shortages (Redknap *et al.*, 2015; Smeds Alenius *et al.*, 2014). Numerous examples of cross-sectional designs are found in scholarly journals and such studies are considered to have provided valuable data in researching the relationships between psychosocial conditions and various variables in healthcare staff (Chen and Weng, 2017; Fang *et al.*, 2020; Januario *et al.*, 2019; Lamont *et al.*, 2017; Schadenhofer *et al.*, 2018). Utilizing the structured methodology of quantitative design, the researcher intended to translate unobservable content into objective statistical data to observe patterns among respondents (Lee Abbott and McKinney, 2012).

3.3. Sample

In quantitative research sampling is critical as the method chosen dictates the degree to which the findings of this study can be generalised beyond the current study (O'Dwyer and Bernauer, 2014). The sample was therefore drawn from a sampling frame which contained the information related to the population of interest. The sampling frame for this study was all ANPs who were the Health Service Executive (HSE) and the Irish Association of Advanced Nurse and Midwife Practitioners (IAANMP) databases of registered ANPs at the time of the study. Non-probability sampling was used, based on these databases, to secure a sample of ANPs in Ireland who were registered with the NMBI.

3.3.1. Eligibility Criteria

Inclusion criteria for this study were ANPs registered on the NMBI advanced practice register and currently employed as an ANP in the Health Service Executive or in the private health sector. Potential respondents were asked to confirm these criteria to ensure they were ANPs during the consent and data collection phase of the survey. Exclusion criteria were advanced midwife practitioners and candidate advanced nurse/midwife practitioners. Previously it has been asserted that at least one years' experience working at advanced practice level is required to implement all advanced practice role dimensions, including leadership (Baker, 1987; Lamb *et al.*, 2018), however in this research all ANPs were included for two reasons: firstly leadership is identified as a core component of all nursing roles (Scott and Miles, 2013) and is a core

competency of nurse practitioners (Lamb *et al.*, 2018; NMBI, 2017) with no indication that it is only expected after a specific length of experience. Secondly; the criteria in Ireland on ANP roles has changed following a new policy on ANP role development (Department of Health, 2019). Therefore, all ANPs who are on the advanced practice register and included on the databases of the Health Service Executive (HSE) and the Irish Association of Advanced Nurse and Midwife Practitioners (IAANMP) were included.

3.4. Procedure

The online survey consisting of 56 items was built using Google Forms and included a consent form prior to starting. Google Forms is a cloud-based data management tool which can be used for designing and developing web-based questionnaires (Vasantha and Harinarayana, 2016). Web based surveys such as those created in Google Forms overcome some of the inherent limitations of other survey methods such as face to face survey or telephone interviewing which require manual data entry, limited sample size and cost (Szolnoki and Hoffmann, 2013). The respondents could complete the survey over multiple sittings, as the Google form permitted "Edit After Submit" which allowed respondents to save the progress they had made filling out the survey and allowed them to complete it at a later time. They could discontinue at any time if they choose to do so. Respondents needed to 'submit' the survey on the final page for the data to be available to the researcher. Incomplete surveys were not available to the researcher. No identifying information on respondents was collected, thereby ensuring anonymity of the respondents.

Verifying respondents identity and in this case eligibility is a recognised difficulty when administering on-line surveys (Teitcher *et al.*, 2015). To recruit respondents, two organisations were approached as each hold the email addresses of different ANP cohorts (Appendix 5). The first was the HSE. The HSE email list contained email addresses for ANPs who are in the demonstrator sites[1] which were established following the implementation of the Policy on the Development of Graduate to Advanced Nursing and Midwifery Practice (Department of Health, 2019). The second organisation was the Irish Association of Advanced Nurse and

[1]The Chief Nurses Office in the Department of Health established demonstrator sites for advanced practice in May 2017 to develop a critical mass of advanced nurse and midwife practitioners in Ireland across four categories of clinical practice: unscheduled care (including acute medicine and emergency nursing), rheumatology, respiratory and older persons

Midwife practitioners (IAANMP). This association was established in 2004 to provide a forum to support those involved in the promotion and development of advanced Nursing and Midwifery practice in Ireland. Inviting participates by email via the HSE and IAANMP (who hold databases of registered ANPs) allowed a level of certainty around the invited sample (i.e. That respondents were Advanced Nurse Practitioners registered with the Nursing and Midwifery Board of Ireland (NMBI)).

Using both organisations was an attempt to reach as many of the ANPs registered with NMBI at the time of dissemination and reduce the possibility of sampling error. The email list held by the HSE contains the work email addresses of approximately 151 ANPs and the IAANMP email list contains the email addresses of approximately 140 ANPs. An invitational email was sent to ANPs (Appendix 6) via the two organisations after ethical approval (ethical approval process detailed in section in Section 3.5 and Appendix 7). While it is possible that a small number of potential respondents existed on the email lists of both organisations (i.e. redundancy) and may have been contacted twice, this issue was addressed in the introductory email with respondents being asked to respond only once. The invitation, which clearly indicated that the email was being sent on behalf of the researcher, included the purpose of the study and a link to the online survey.

The Tailored Design Method (TDM) internet survey implementation method proposed by Dillman *et al.*, (2014) was used to maximize response rates. The guiding principles established by Dillman, (1978) have been refined and adapted in response to technological advancements and emerging evidence in the interim. According to the TDM having four email contacts helps reduce non-response error when administering internet surveys. Each step of the survey dissemination plan was guided by social exchange theory (Dillman *et al.*, 2014). Dillman's approach espouses a varied look and feel of repeated emails to encourage interest while communicating the investigator's appreciation for the work the respondents has been requested to do (Dillman, 2007). Through repeated contacts, the importance of participation was emphasized and was communicated through persistent and personalised efforts by the investigator (Dillman, 2007). To that end, a reminder email to complete the survey was sent one week following the initial distribution (July 28th 2020), with a second reminder at the end of week two (August 04th 2020). A follow up thank you/ final reminder was sent 21 days after the first distribution (11th August 2020) (Appendix 8). The survey was available to potential respondents for two weeks following the final reminder (Closed on August 31st 2020). Upon

accessing the survey link, ANPs were directed to the study information page and asked to give explicit consent to participate by ticking 'agree' (Appendix 9). If potential respondents gave their consent, they gained access to the survey. If they did not indicate consent (chose "disagree"), they were thanked for their time and their contribution was ended. Also, respondents in this study were asked before completing the survey to verify that they met the inclusion criteria. Once eligibility was confirmed and informed consent was obtained the respondents were granted access to the survey. The survey took approximately 20 minutes to complete which is in line with the maximum survey length recommended (Revilla and Ochoa, 2017). The data collection period started on July 21st 2020 and ended on August 31st 2020.

3.5. Ethical approval

Ethical approval for the study was obtained from University College Cork's Social Research Ethics Committee (SREC) [Log 2020-108] and amendment [Log 2020-108A1] which explicated the number of reminders which would be sent to the sample (Appendix 7). The inconvenience and potential distress of respondents was minimized through the use of easily understandable surveys and ensuring anonymity. Risks for harm and vulnerability were minimal in this project since it did not involve a vulnerable population as defined by the UCC vulnerability guidance document (UCC, 2019) or the introduction of any experimental intervention.

The potential ethical dilemmas identified in this study included: 1) the principle of full-disclosure, 2) the right to fair treatment, 3) the right to privacy, and 4) informed consent. To deal with each of the ethical principles outlined above the following procedures were undertaken. All ANPs were informed about the measurement procedures involved in this study (full-disclosure). ANPs were also informed about the nature of the research and that they were entitled not to participate in the study if they so chose (informed consent) (Appendix 9). The potential dilemma of respondent burden was also considered (the right to fair treatment). To address respondent burden each of the concepts and individual items in this survey (Appendix 9) had been considered to optimize survey length and quality of the information to be gathered. Also, ANPs were assured that they did not need to complete the survey if they did not wish to and that refusal to participate in the study would in no way impact on their professional development (the right to fair treatment). No data which would allow the identification of individuals or individual hospitals/clinical settings was collected. Moreover, no individual

identifying information was entered onto computer files or identification numbers or IP addresses collected (right to privacy). The datasets and statistical output were held on password protected computers and only accessible to the student and his supervisors (right to privacy). Data were and will only be used for the purposes disclosed. The researcher did not have access to any of the respondent's email addresses.

It was recognized that respondents may have found exploration of aspects of their leadership role and the impact of consciousness raising during completion of the survey to be challenging or distressing. However, this was deemed to be of low risk. Details of emotional support were made available, and as previously stated, potential respondents did not need to complete the survey if they were distressed (the right to fair treatment). The researchers adhered to the principles of the Ethical Guide issued by An Bord Altranais (2007) and the Helsinki Declaration (1964) along-with the Code of Professional Conduct and Ethics (NMBI 2014).

3.6. Response Rate

The survey was sent to the distributing organisations on July 21st 2020. At the time of survey distribution there were 453 ANPs on the NMBI advanced practice register (Appendix 1). It was not possible to calculate an exact response rate in this study as it is unknown how many ANPs were invited to participate (due to incorrect email addresses and the potential that some ANPs on the advanced practice register were inactive at the time of the study) by the distributing organisations so NMBI registration numbers served as a possible denominator. The HSE email was sent to 151 ANPs and the email from the IAANMP was sent to 94 ANPs. It is possible, as previously addressed, that a small number of potential respondents existed on the email lists of both organisations and may have been contacted twice. To assist in calculating as accurate a response rate as possible the organisations were asked to report on how many emails 'were not delivered' to intended recipient (indicating an email address which was invalid, not working or not accepting emails for another reason). The HSE reported that they received six non-deliverable emails stating that the email addresses were invalid, 2 notifications stating there was a communication failure and the email could not be delivered and 2 notifications stating that emails it could not be delivered due to a security/permissions issue (total 10 potential respondents). The IAANMP reported that they received no notifications of emails not being delivered.

The initial dissemination in week one resulted in 101 responses (22.3% of ANPs nationally) from ANPs. A further 33 responses were received in week two, with the remaining 21 responses in the remaining 2 weeks. After data cleaning 153 responses were found to be viable for further analysis. If taking 453 ANPs on the advanced practice section of the NMBI register at the time of distribution as the denominator a 33.8% response rate was attained. A total of 60% (153/245) of ANPs who received the survey participated in the research.

3.7. Measurement

This section contains information on the instruments along with the investigator developed demographic questions that were used in this research study. In this study the dependent variable was self-leadership while the related independent variables were commitment to the workplace, work engagement, influence at work, job satisfaction and intention to leave. The survey methodology used in this study combined previously psychometrically validated instruments into a single survey questionnaire. The demographic variables were placed first in the survey followed by the instruments used to measure self-leadership and psychosocial factors. These will be discussed further in Section 3.8.

Questions in this section collected information on age, gender and length of experience in the ANP role. These variables were based on study findings which showed how demographic variables such as age (Gilbert *et al.*, 1990; Rosing and Jungmann, 2015), gender (Alan *et al.*, 2019; Paustian-Underdahl *et al.*, 2014) and experience (Avery *et al.*, 2003; Curtis *et al.*, 2011) affected leadership in employees (Appendix 9).

3.8. Instruments

This section outlines the instruments used in this study. Determination of an employee's leadership effectiveness may be subjective (Sonmez Cakir and Adiguzel, 2020) and because of the psychological nature of the variables involved (Unsworth and Mason, 2012), the dependent variable of self-leadership skills, behaviours and cognitions was measured using the revised Self Leadership Questionnaire (RSLQ) (Houghton and Neck, 2002). Scales from the third international long version of the Copenhagen Psychosocial Questionnaire (COPSOQ III) (Burr

et al., 2019) were used to measure the variables of influence at work, commitment to the workplace and work engagement. Finally single-item measures were be used to measure job satisfaction and intention to leave.

3.8.1. Revised Self Leadership Questionnaire

The RSLQ has been used to measure self-leadership across a range of industries (Cranmer *et al.*, 2019; Marvel and Patel, 2018; Müller and Niessen, 2019) including nursing (Kim, 2019; Lee *et al.*, 2015). It is a multi-dimensional instrument measuring not only self-leadership as a whole but also the three dimensions that contribute to the concept of self-leadership. The RSLQ items comprise nine subscales categorised into three groups. These are: behaviour focused strategies (18 items); constructive thought patterns (12 items); natural rewards (5 items) (Houghton and Neck, 2002). Each of the three dimensions is further broken down into sub-scales which are graphically illustrated in Figure 4.

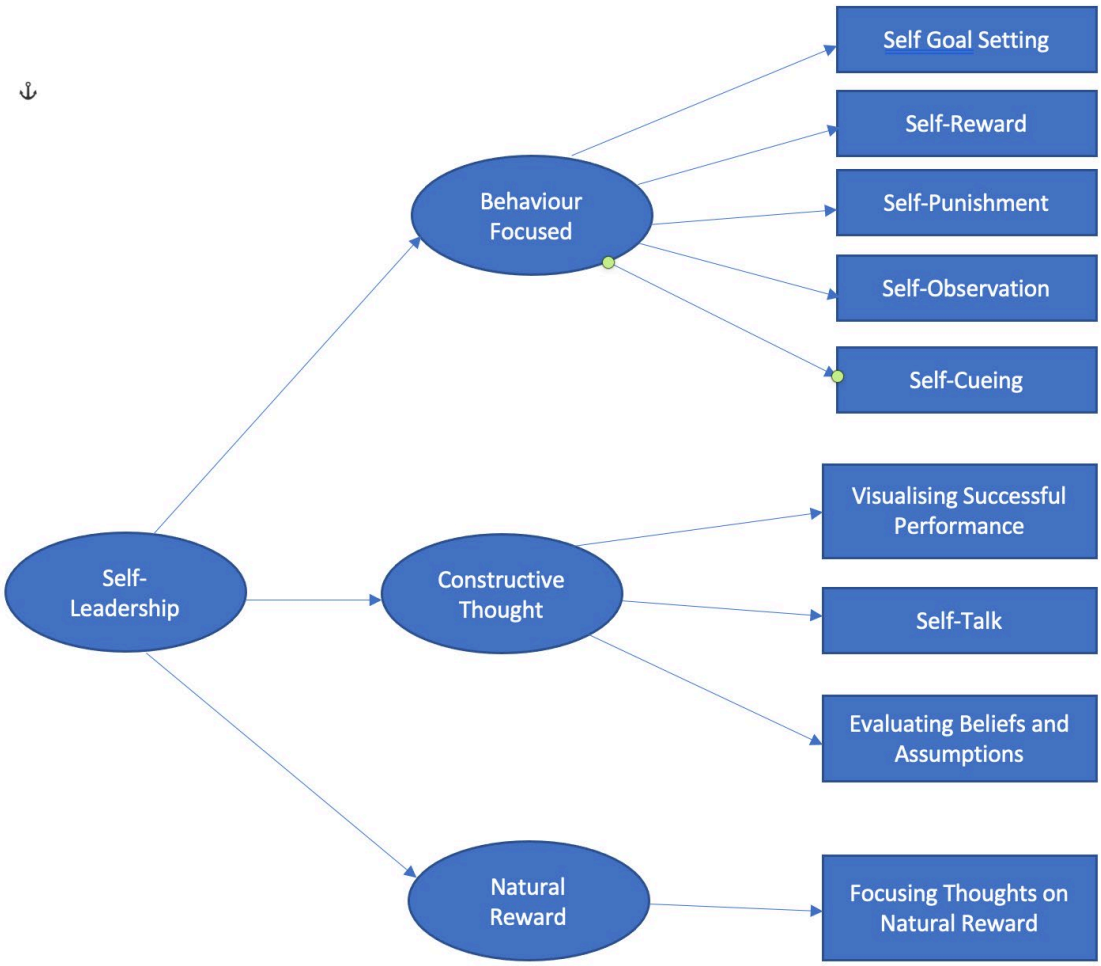


Figure 4: Relationship between Self-Leadership construct, dimensions, and sub-scales

The instrument features a five-point Likert-type scale ranging from 1 (Not at all accurate) to 5 (completely accurate) and measures the response to 35 questions within the nine subscales. The number of items for each dimension and subscale are presented in Table 7. The individual RSQL items are included in Appendix 9. All the items were averaged to obtain an overall self-leadership score, with a higher total score indicating greater self-leadership. The items that pertain to each of the three self-leadership dimensions were averaged for that specific dimension to obtain an average for each of the three separate self-leadership dimensions.

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Table 8: Self-Leadership items for each dimension and subscale

Dimension	Sub-scale	No. of Items
Behaviour Focused Strategies	Self-Goal Setting	5
	Self-Reward	3
	Self-punishment	4
	Self-Observation	4
	Self-Cueing	2
Constructive Thought Pattern Strategies	Visualising Successful Performance	5
	Self-Talk	3
	Evaluating Beliefs and Assumptions	4
Natural Reward Strategies	Focusing Thoughts on Natural Rewards	5

Psychometric testing of the RSLQ (Houghton and Neck, 2002) demonstrated improved internal consistency when compared with the 50 item self-leadership questionnaire constructed by Anderson and Prussia, (1997) with Cronbach's Alphas between 0.74 and 0.93 of the nine underlying subscales.

3.8.2. Copenhagen Psychosocial Questionnaire

The Copenhagen Psychosocial Questionnaire (COPSOQ) was originally developed in 1997 at the National Institute of Occupational Health in Denmark by Vilhelm Borg and Tage Søndergård Kristensen to assess the psychosocial stressors that lead to unhealthy work environments and caused physical and psychological harm (Burr *et al.*, 2019; Moncada *et al.*, 2014). The subscales used from the COPSOQ version III have undergone changes from previous versions of the instrument. As compared with the COPSOQ II, the influence at work dimension in version III has been reworded to better reflect the original Danish wording and the concept of work engagement was introduced (Burr *et al.*, 2019). The changes are based on experiences from practical applications of previous versions for workplace assessments and also to reflect emerging literature and evidence base for positive occupational psychology, and to assist in the integration of the fields of occupational health and management and organization (Berthelsen *et al.*, 2020; Burr *et al.*, 2019).

Three scales from the third international long version of the COPSOQ III (Burr *et al.*, 2019) were used to examine aspects of ANPs work such as the degree to which ANPs have influence in their workplaces, their commitment to the workplace and the extent to which ANPs are engaged with their work (Table 8). Influence at work was a composite of six items, and work engagement four items. Both the influence at work and work engagement scales had response options of: always; often; sometimes; seldom; never/ hardly ever. Commitment to the workplace was measured using five items with response options of: to a very large extent; to a large extent; somewhat; to a small extent; to a very small extent. The item 'How often do you consider looking for work elsewhere?' was reversed scored. All three scales individually had a theoretical range of 0-100. A high score on each of the scales indicated high influence at work, high levels of work engagement and commitment to the workplace separately.. The average score for each scale was calculated if at least half of the items were completed. If the respondents answered less than half of the items in a particular scale, then the responses were considered as missing (Pejtersen *et al.*, 2010).

The COPSOQ III has been validated for use as a whole across a range of work sectors (Burr *et al.*, 2019; Sahan *et al.*, 2018)**.** The international version of COPSOQ III has demonstrated satisfactory basic psychometric properties including reliability (Cronbach α), ceiling and floor effects (fractions with extreme answers), and distinctiveness (correlations with other dimensions) in findings from a number of countries (Burr *et al.*, 2019; Şahan *et al.*, 2019). Recently, Berthelsen *et al.*, (2020) have evaluated the reliability and construct validity of the COPSOQ III Swedish national standard version; they found that the internal consistency measure (Cronbach's alpha) was above 0.70 for all scales indicating satisfactory levels of reliability. Additionally, the reliability and construct validity at both individual and organizational level was found. The authors therefore concluded that the COPSOQ III demonstrated good psychometric properties for its intended uses (Berthelsen *et al.*, 2020).

Table 9: COPSOQ Scales and number of Items

Variable	Number of Items	How is Scoring Completed? What is total Score?	**Notes**
Influence at work	6	Always (100); Often (75); Sometimes (50); Seldom (25); Never/hardly ever (0)	The higher the score the greater degree to which the employee can influence aspects of work itself
Work engagement	3	Never (0), Seldom (25), Sometimes (50), Often (75), Always (100)	The higher the score the greater the attachment employees feel to the task independently of how they experience their workplace
Commitment to the workplace	5	To a very large extent (100); To a large extent (75); Somewhat (50); To a small extent (25); To a very small extent (0)	The higher the score the greater the degree to which one experiences being committed to ones' workplace

3.8.3. Job Satisfaction

Job satisfaction was measured using a single question "How satisfied are you with your current job?" with response options being very satisfied, satisfied, unsatisfied and very unsatisfied. There has been debate regarding the use of single items to measure individual constructs. Influential early papers such as that by Churchill, (1979) recommended multi-scale instruments over single items for those investigating behavioural relationships. It has since been asserted that a strength of the single-item measure of job satisfaction is that it allows each individual to rate their job satisfaction based on job-related factors which are important to the individual (Scanlan and Still, 2019; Wanous *et al.*, 1997).

3.8.4. Intention to Leave

Intention to leave was measured using a single item 'If possible, would you leave your current job within the next year as a result of job dissatisfaction', consistent with previous research in nursing (Drennan *et al.*, 2018; Sasso *et al.*, 2019). Previous research measuring intention to leave in ANPs have used a dichotomous item, with response options of yes or no, when asking

whether they intended to leave their positions within 1 year (Ho *et al.*, 2021; Poghosyan *et al.*, 2020). Despite this there is a paucity of research which examines the ability of a single item to measure intention to leave (Borg, 2009). Although there is a lack of information on the metric properties of single item intention to leave instruments, research exists which examines single items to measure other constructs within the health arena including the similar concept of turnover intention (Fakunmoju, 2020; Jovanović and Lazić, 2020; Muramatsu *et al.*, 2021).

3.9. Reliability Analysis

Reliability analyses determined if the construct items for the dependent variable (self-leadership) and independent variables (commitment to the workplace, work engagement, influence at work, job satisfaction and intention to leave) had sufficient reliability (i.e. that a scale consistently reflects the construct it is measuring). Tabachnick and Fidell, (2013) stated that reliability analysis is used to evaluate the properties of measurement scales and a scale's individual item Table 9 presents the Cronbach's alpha reliabilities associated with all scale measures along with the number of items included in each scale. Alphas of .7 or above are considered acceptable, with this threshold found to be met in all cases with the exception of BFS: Self Observation, CTPS: Evaluating Beliefs and Assumptions, Natural Reward Strategies, Behaviour Focused Strategies, and Constructive Thought Patterns. In all five cases, reliabilities were found to be above .6. While not meeting the threshold of .7, these reliabilities were still not found to be very low, and it has been suggested where there are fewer than 10 items a lower threshold may be acceptable.

Table 10: Comparison of Reliability Estimates of the RSLQ and COPSOQ Scales in this Study and with Previous Studies

Measure	N of Items	Cronbach Alpha (Present Study)	Cronbach Alpha (Burr *et al.,* 2019)	Cronbach Alpha (Pejtersen *et al.,* 2010)	Cronbach Alpha (Houghton and Neck 2002)	Cronbach Alpha (Nel and van Zyl (2015)
Influence at Work	6	.723	.80	.73		
Commitment to the workplace	5	.853	.64	.76		
Work Engagement*	3	.796	.85	N/A		
BFS: Self Goal Setting	5	.829			.84	.905
BFS: Self Reward	3	.885			.93	.774
BFS: Self Punishment	4	.822			.86	.714
BFS: Self Observation	4	.681			.82	.829
BFS: Self Cueing	2	.813			.91	.908
CTPS: Self Talk	3	.864			.92	.710
CTPS: Evaluating Beliefs and Assumptions	4	.626			.78	.865
CTPS: Visualising Successful Performance	5	.787			.85	.864
Natural Reward Strategies	5	.645			.74	.798
Behaviour Focused Strategies	5	.639				.923
Constructive Thought patterns	3	.696				.910
RSLQ	9	.730				

* New dimension of work engagement was introduced in COPSOQ III

The construct validity of the RSLQ has been established using exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA) utilizing structural equation modelling techniques authenticated exceptional fit for a higher order factor model of self-leadership in a sample of management students (Houghton and Neck, 2002:49). In subsequent testing Neubert and Wu, (2006) examined factor reliabilities and factor structure of the RSLQ in two Chinese samples and found that the factor structure was stable. Elsewhere findings from Houghton *et al.*, (2004) provide support for hierarchical factor structure of self-leadership factors. To the best of the students' knowledge there is no previous studies measuring self-leadership among

nurse practitioners using the RSLQ. For this reason, a CFA was performed as part of the current study, and the results of this are presented in Section 3.9.1.

3.9.1. Factor Analysis

IBM Analysis of a Moment Structures (AMOS®), 25.0 was used to confirm the appropriateness of the factor structure as well as the fit between the model and the data (Appendix 10). An analysis of the study variables distribution was first checked as data which is not normally distributed can affect the model fit index and accuracy of model estimation (Chen *et al.*, 2018; DiStefano and Hess, 2005). Confirmatory factor analysis was used to assess the factor structure of the variables from the RSLQ.

There is debate surrounding the sample size necessary for factor analysis, with some authors suggesting in excess of 200 participants being necessary and others advocating a ratio of five or ten respondents per variable. According to Tabachnick and Fidell, (2018), the sample for a study involving a factor analysis should consist of at least five participants per item for an instrument, although it has been asserted that there is little empirical or theoretical evidence to support such recommendations around ratios (Mundfrom *et al.*, 2005; Rouquette and Falissard, 2011) or absolute numbers (Kyriazos, 2018). Moreover, there is variability in the absolute minimum sample advocated with minimum samples of between size of 50 to 500 respondents suggested to enable factor analysis (Rouquette and Falissard, 2011). In this study there were four respondents (n = 137) per variable (n = 35), which is consistent with previous nursing studies conducting factor analysis (e.g. Sadowska *et al.*, 2021).

The listwise deletion method was used to manage missing data, and therefore any case which had any missing value had its data excluded from the analysis. Descriptive statistics were used for analysis of the demographic data and the mean and standard deviation for each instrument item. To measure internal consistency, the proportion of true variability to the total observed variability was assessed using Cronbach's Alpha (α). The Kaiser-Meyer-Olkin (KMO) test was used to determine the sample size for factor analysis. Bartlett's sphericity test, was used to test the overall significance of all the correlations within the correlation matrix. Horn's parallel analysis was used to assesses the number of principal components and common factors (Saccenti and Timmerman, 2017).

Prior to performing the confirmatory factor analyses, multicollinearity was tested using linear regression, where each variable was inputted in the dependent variable box in turn, and other variables in the independent variable box in SPSS version 27. The variance inflation factor (VIF) was used to determine that regressors did not correlate among each other, with VIF<10 considered to be acceptable. Multicollinearity was not an issue among the observed variables (all VIF scores<5) (Field, 2017).

3.9.1.1. Validity Checks

The Kaiser-Meyer-Olkin test and Bartlett's sphericity test were used to assess sampling adequacy and suggest that the data is suited for Factor Analysis. The KMO value for the data is 0.805 (values between 0.8 and 1 indicate the sampling is adequate). The result of Bartlett's sphericity test, which tests the overall significance of all the correlations within the correlation matrix, was significant ($\chi^2(595) = 2281.9$, $p < 0.001$), indicating that it was appropriate to use a factor analytic model on this set of data.

3.9.1.2. Results of First Order Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) was conducted using IBM Amos 25.0 in order to confirm the appropriateness of the factor structure as well as the fit between the model and the data. The original factor structure associated with this scale was used in this analysis, with the three dimensions of behaviour-focused strategies, natural rewards strategies, and constructive thought pattern strategies. The dimension of behaviour-focused strategies incorporated the sub-scales of self-goal setting, self-reward, self-punishment, self-observation, and self-queuing, with the sub scale of focusing thoughts on natural rewards composing the entire dimension of natural rewards strategies. In addition, the dimension of constructive thought pattern strategies was associated with the sub-scales of visualizing successful performance, self-talk, and evaluating beliefs and assumptions. Which specific questions of these 35 were associated with each of the sub-scales and similarly, each of these dimensions, are evident in Table 10 and 11. A structural equation model which encompassed this confirmatory factor analysis was created and estimated in IBM Amos 25.0.

Within a confirmatory factor analysis, an appropriate factor structure as well as good fit between the model and the data would be evidenced by the following: 1) statistically significant

path estimates, 2) standardized estimates of 0.400 or above, and 3) acceptable or better model fit. First, regarding the significance of these paths, a single path was found to achieve statistical significance at the .05 alpha level, with all other paths found to achieve statistical significance at the .001 alpha level. When modelling factors in the structural equation model, it is necessary to either constrain the path estimate of one of the items associated with the factor, or to constrain the variance associated with that factor. In this model, the former option was selected, with each factor including a single item whose path estimate was constrained to be equal to one. In these cases, no standard error, *z*-score, or probability level is determined. This is reflected in Table 11 for the specific cases. Overall, in terms of statistical significance, these results clearly suggest an appropriate factor structure and good fit between the model and the data based on the statistical significance associated with these path estimates.

Next, with regard to the magnitude of the standardized estimates found in these results, only a single path estimate was found to be below the standard of 0.400, which consisted of the path specified between the dimension of behaviour-focused strategies and self-punishment (Dagnall *et al.*, 2018). This path was also found to be negative. This suggests that based on these data, the subscale of self-punishment requires further investigation, as it does not appear to be a good component of the dimension of behaviour-focused strategies dimension. In all other cases, standardized estimates were found to be better than adequate, indicating an appropriate factor structure and a good fit. In addition, these remaining results also suggest retaining all other subscales associated with these dimensions, as well as retaining all items associated with all subscales.

Table 11: Results of Confirmatory Factor Analysis between Dimensions and Subscales

Path*	Estimate	Std. Estimate	z
BFS→SP	-0.229 (0.091)	-0.244	-2.512*
BFS→SGS	0.588 (0.074)	0.884	7.971***
BFS→SO	0.615 (0.101)	0.807	6.071***
BFS→SR	0.474 (0.091)	0.488	5.193***
BFS→SC	0.519 (0.113)	0.528	4.575***
CTPS→EBAA	0.651 (0.091)	0.899	7.115***
CTPS→ST	0.533 (0.097)	0.499	5.514***
CTPS→VSP	0.51 (0.096)	0.840	5.291***

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 12: Results of Confirmatory Factor Analysis between Subscales and Items

Path	Estimate	Std. Estimate	z
SGS→Q2	1	0.683	
SGS→Q11	1.099 (0.152)	0.662	7.252***
SGS→Q20	1.108 (0.134)	0.767	8.238***
SGS→Q28	1.223 (0.148)	0.770	8.256***
SGS→Q34	1.346 (0.181)	0.680	7.418***
SR→Q4	1	0.741	
SR→Q13	1.066 (0.097)	0.882	11.017***
SR→Q22	1.189 (0.106)	0.937	11.255***
SP→Q6	1	0.753	
SP→Q15	1.014 (0.118)	0.789	8.599***
SP→Q24	0.876 (0.108)	0.728	8.103***
SP→Q30	0.903 (0.118)	0.682	7.632***
SO→Q7	1	0.578	
SO→Q16	0.611 (0.117)	0.565	5.215***
SO→Q25	0.8 (0.133)	0.716	6.026***
SO→Q31	0.822 (0.146)	0.633	5.613***
SC→Q9	1	0.737	
SC→Q18	1.137 (0.192)	0.930	5.938***
NRS→Q35	1	0.521	
NRS→Q32	1.078 (0.222)	0.567	4.859***
NRS→Q26	0.972 (0.194)	0.599	5.019***
NRS→Q17	0.981 (0.221)	0.488	4.429***
NRS→Q8	0.775 (0.191)	0.430	4.053***
VSP→Q1	1	0.478	
VSP→Q10	1.502 (0.281)	0.714	5.352***
VSP→Q19	1.601 (0.285)	0.819	5.621***
VSP→Q27	1.353 (0.26)	0.672	5.202***
VSP→Q33	1.174 (0.233)	0.630	5.045***
ST→Q21	1	0.915	
ST→Q12	0.945 (0.076)	0.856	12.446***
ST→Q3	0.853 (0.084)	0.719	10.119***
EBAA→Q29	1	0.649	
EBAA→Q23	0.642 (0.145)	0.432	4.427***
EBAA→Q14	1.105 (0.173)	0.691	6.397***
EBAA→Q5	0.503 (0.133)	0.364	3.787***

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Finally, with regard to measures of model fit, several model fit indices were examined in order to explore model fit adequacy (Table 12). First, a normed chi-square of 1.453 was found. A root mean square error of approximation (RMSEA) of .055, 90% CI = [.046, .063], p = .180 was indicated, with a comparative fit index (CFI) of .882, and a Tucker–Lewis index (TLI) of .864. Regarding CFI and TLI, measures of .90 or above indicate acceptable model fit (Brown, 2006); while these measures were slightly below this standard in this model, the calculated metrics were close to this value and these measures are largely based on intuition and experience rather than on any statistical justification (Xia and Yang, 2019). The RMSEA indicated good model fit (Hu and Bentler, 2009), while normed chi-square indicated excellent model fit (Kline, 2015; Ullman and Bentler, 2012). Overall, the results of these model fit indices, as well as all other results examined, indicate an excellent factor structure (with the one exception of self-punishment), and a good fit between the model and the data.

Table 13: Measures of Model Fit

	χ^2	*df*	*p*	χ^2/df	RMSEA	CFI	TLI
1st order model	797.636	549	<0.001	1.453	0.055	.882	.864
2nd order model	166.036	41	<0.001	4.050	0.142	.767	.625

3.9.1.3. Results of Second Order Confirmatory Factor Analysis

A second-order factor analysis was performed to examine whether or not all the factors fitted the general concept of self-leadership (Tables 13 and 14 and Fig. 5). Additionally , a second order factor analysis may reveal a view of self-leadership that is more 'harmonious with self-leadership theory' (Houghton and Neck, 2002: 672). Within the second order confirmatory factor analysis, the significance of all paths not constrained to be equal to one were found to achieve statistical significance at the 0.001 alpha level. A single item's path was constrained to be equal to one with regard to each factor, and the associated lack of estimates is reflected in Tables 13 and 14 for these specific cases. Overall, based on the significant path estimates found, these results suggest an appropriate factor structure and good fit between the model and the data.

Table 14: Results of Second Order Confirmatory Factor Analysis between Self-Leadership and Dimensions

Path	Estimate (SE)	Std. Estimate	z
Self-Leadership →BFS	1.000	1.056	
Self-Leadership →NRS	0.992 (0.133)	1.143	7.460***
Self-Leadership →CTPS	0.557 (0.125)	0.699	4.452***

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 15: Results of Second Order Confirmatory Factor Analysis between Dimensions and Subscales

Path	Estimate	Std. Estimate	z
BFS→ SGS	1.000	0.724	
BFS→ SR	0.771 (0.1570	0.386	4.523***
BFS→ SP	0.389 (0.089)	0.372	4.530***
BFS→ SO	1.011 (0.103)	0.843	9.854***
BFS→ SC	0.756 (0.164)	0.394	4.618***
NRS→V25	1.000	0.655	
NRS→V32	0.853 (0.146)	0.451	5.825***
NRS→V35	0.625 (0.146)	0.327	4.289***
CTPS→ ST	1.000	0.479	
CTPS→ EBAA	1.099 (0.217)	0.756	5.066***
CTPS→ VSP	1.285 (0.256)	0.726	5.026***

Note. *$p < .05$, **$p < .01$, ***$p < .001$

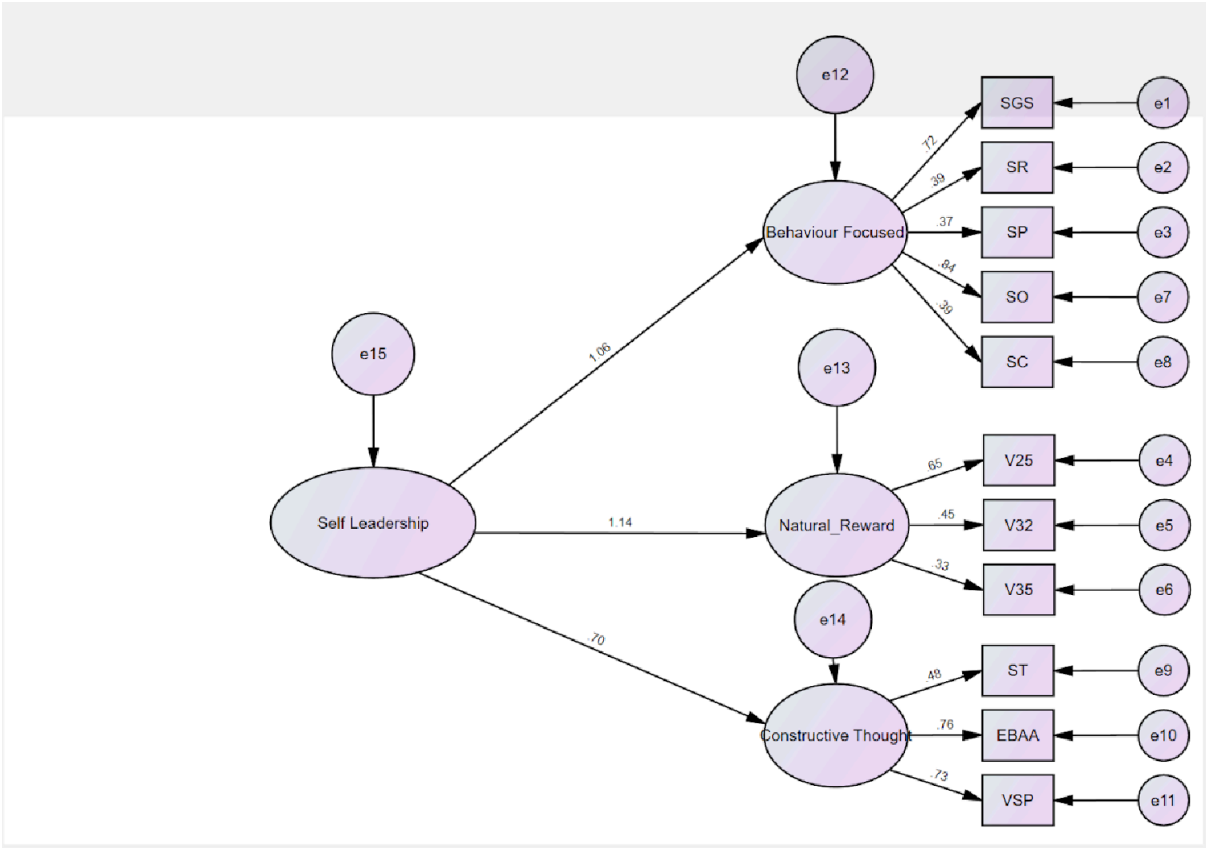


Figure 5: Second order Factor Analysis Revised Self-Leadership Questionnaire

With regard to measures of model fit, several model fit indices were examined in order to explore model fit adequacy (Table 12). First, a normed chi-square (χ^2/df) of 4.050 was found. Ideally a normed chi-square should be <3 and therefore this result indicated poor model fit (Byrne, 2013; Kline, 2015; Ullman and Bentler, 2012). A root mean square error of approximation (RMSEA) of .142, 90% CI = [.120, .164], p = <.001 was indicated, with a comparative fit index (CFI) of .767, and a Tucker–Lewis index (TLI) of .625. Regarding CFI and TLI, measures of .90 or above indicate acceptable model fit (Brown, 2015). These measures were below this standard in this model, however these measures are largely based on intuition and experience rather than on any statistical justification (Xia and Yang, 2019). The RMSEA indicated a poor fit (Hu and Bentler, 2009). Overall, the results of these model fit indices, as well as all other results examined, does not demonstrate a good model fit.

3.9.1.4. Results of Horn's Parallel Analysis

Horn's parallel analysis was used to assesses the number of principal components and common factors (Saccenti and Timmerman 2017). The parallel analysis showed five factors for the RSLQ explaining 52.3% of the total variance (Table 15).

Table 16: Results of Horn's Parallel Analysis

Component	Observed Eigenvalue	Cumulative %	Random Data Eigenvalues
1	8.815	25.19	2.114
2	3.292	34.59	1.952
3	2.505	41.75	1.852
4	1.926	47.25	1.754
5	1.783	52.34	1.662
6	1.552	56.78	1.585

3.9.1.5. Discussion

Leadership in healthcare is a determining factor in the implementation of evidence based practice and therefore analysis of the psychometric properties of leadership instruments used in healthcare is warranted (Carlson *et al.*, 2021; Sfantou *et al.*, 2017). The present study, to the best of our knowledge, is the first that assessed the psychometric properties of the RSLQ on ANPs. The results support the construct validity of the RSLQ. The results suggest that the hypothesized model fit the data well.

The self-punishment subscale was included in the analyses. This subscale was reverse scored in the cross-sectional study following advice from the original authors (J. Houghton personal communication March 23, 2021). This subscale has been recognised to be problematic, has been highlighted as being different to the other subscales (Nientied and Toska, 2021) and has been excluded by several authors in previous studies (Mahembe *et al.*, 2013; Türköz *et al.*, 2013), including by the instrument authors while testing for measurement invariance across four countries (Houghton *et al.*, 2014). Conversely the self-punishment subscale was not found to be problematic in a study by Boonyarit, (2021).

This study found that the first-order model (three sub-dimensions affecting the observed variables) had a better fit the data than the second-order factor model (with a single self-leadership dimension affecting three self-leadership sub-dimensions and subsequent observed

variables). The results of this analysis do not lend strong support that the RSLQ measures the general concept of self-leadership.

The results of the Horn's parallel analysis in this study suggested that five factors for the RSLQ explaining 52.3% of the total variance. This analysis therefore supports the conclusions of Mahembe *et al.*, (2013) who found evidence for a lower number of subscales to better explain a higher order factor structure for the RSQL. Further analysis to test models which exclude those path estimates found to be below the standard of 0.400 (i.e. the self-punishment subscale and some items chosen to represent the natural rewards subscale) may lead to better measures of model fit in future work.

3.10. Data Processing

Data were imported into Statistical Package for the Social Sciences (SPSS) version 26 (IBM Corporation, Armonk, NY, USA) from Google forms via Excel for data cleaning. Using Google forms minimised data coding error as the researcher does not need to manually enter data (Vasantha and Harinarayana, 2016). The responses to the survey questionnaire underwent screening for abnormalities such as missing data (Allen, 2017) to achieve the most accurate data possible for analysis.

3.10.1. Missing data

Missing data may be one of the most problematic design and statistical challenges in research (Baraldi and Enders, 2010) which can exist at the item-level, construct-level, and person-level missing data (Newman, 2014). In this research a response to each question was not mandatory before answering the next question to avoid having respondents abandon the survey because there was a question that they did not want to answer.

Assessing and understanding missing data is important to correctly handle the remaining data so that the correct method is selected to replace the missing data. The Missing completely at random (MCAR) test is used to determine if the data that is missing from a dataset is missing at random or is missing in a systematic way (Li, 2013). The test assumption accepts that the missingness of the data is independent of both the observed and the unobserved data MCAR. To determine whether or not the assumption of MCAR is met, Little's test was performed. The Little's test is used to determine if a significant difference exists between the means of different

missing value patterns. In the case of a *p*-value >.05, we can accept the null hypothesis and conclude that the data is missing randomly. If the *p*-value is <.05 we would have to reject the null hypothesis and this would indicate that there may be a systematic bias in the data. In this study, the Little's test returned a non-significant chi-square value ($p < .247$), we can accept the null hypothesis and accept MCAR as the missing pattern and the data. The main consequence of data missing at random is a reduced sample size (Berchtold, 2019).

Missing study data was assigned the designation code (99) in SPSS. The researcher first assigned abbreviated terms to variables and applied variable labels. In addition to identifying the extent of incomplete or missing data, the effect of missing data and adequacy of fit was determined by statistical testing (Mertler and Vanetta-Reinhart, 2020). Missing data was determined by calculating frequencies and potential effects identified by assessing means, standard deviations, kurtosis and skewness (Mishra *et al.*, 2019).

Despite the importance of missing data there is no consensus in the literature regarding what constitutes an acceptable level of missing data for valid statistical inferences (Dong and Peng, 2013). It has been asserted however that less than 5% missing data is likely to be inconsequential (Schafer, 1999). Tabachnick and Fidell, (2018) point out that if less than 5% are missing completely at random almost any procedure for handling missing values yields similar results. In the data set the maximum percentage of missing data was 1.9% for any variable.

One survey was eliminated as there was 46 missing data points across 51 items, while a second was eliminated as more than 50% of variable data points were missing. Although eliminating unit level missing data, threatens the representativeness of the whole sample this subject represents less than 1% (0.645) of all ANP replying to the survey and it was therefore deemed appropriate to remove them (Berchtold, 2019).

One remedy to item-level missing data is listwise deletion (Berchtold, 2019). To handle this missing data, the "exclude cases listwise" default option was ticked in SPSS for the descriptive statistics, which excluded cases that had missing values for any of the variables in any of the analyses. For the inferential statistics the "exclude cases pairwise" default option will be used. For the inferential statistics this means that only cases relating to each pair of variables with missing data involved in an analysis will be deleted.

3.11. Data Analysis

Demographic variables were measured using count and percentage statistics. Reliability analyses were used to evaluate the criterion and predictor variable constructs. Descriptive analysis was conducted on the demographic, self-leadership and psychosocial data of all respondents. Analyses conducted, included frequencies for categorical data and means for continuous data. Prior to commencing statistical analysis it was necessary to determine if the data is normally distributed which can be achieved by plotting the data (Curtis and Drennan, 2013).

3.11.1. Normality of the data

Normality tests were conducted using SPPS with the dependent variable self-leadership and independent variables, commitment to the workplace, work engagement, influence at work, job satisfaction and intention to leave. To determine the skewness and kurtosis z-values these measures were divided by their standard error (should be somewhere in the span -1.96 to +1.96, but can be more liberal spanning -3.29 to +3.29 for samples >50 and <300 respondents).

The Shapiro-Wilk test (p value > 0.05) (Ghasemi and Zahediasl, 2012; Shapiro and Wilk, 1965) was interpreted for normality. A visual inspection of their histograms , normal Q-Q plots and box plots as recommended by Tabachnick and Fidell, (2013) were inspected for a reasonably straight line, which indicates a normal distribution (Pallant, 2016). Scores on each subscale appeared to be normally distributed and appeared in a reasonably straight line, indicating normality for commitment to the workplace, work engagement, influence at work, job satisfaction and intention to leave.

3.11.2. Inferential analysis

Inferential analysis was used to investigate potential associations between self-leadership and psychosocial work characteristics. Inferential statistics also measured the probability that results were not due to chance or error (Trochim and Donnelly, 2006).

There is considerable debate among methodologists about the appropriate statistical methods which should be used in analysing data resulting from Likert scales (Asún *et al.*, 2016; Stratton, 2018; Willits *et al.*, 2016). This may stem in part from a lack of consensus about whether the data generated from Likert scales is ordinal or interval in character (Stratton, 2018).

Nonetheless, there appears to be agreement in publications in the past decade that it is acceptable to treat them as interval measures and that the robustness of parametric tests means that they may be used to analyse data from Likert scales (Norman, 2010; Polit and Beck, 2015; Wadgave and Khairnar, 2016; Willits *et al.*, 2016). Previous researchers using the German standard version of the COPSOQ (Degen *et al.*, 2021) and the COPSOQ I and II (Meira and Coelho, 2019; Mette *et al.*, 2018) have used parametric tests to analyase their data when sampling healthcare workers. The various analyses used in this study shall be elaborated on in the following sections.

3.11.3. Independent samples *t*-Test

The independent samples *t*-test compares the means of two independent groups (Coolidge, 2021). In practice this requires one group to provide data which is then compared with the data provided by a different group of respondents, with the *t*-statistic establishing whether the two means collected from the independent samples differ significantly. The following assumptions should be met prior to performing a *t* -test (Kim and Mallory 2014).

- Independence of the observations: The independent variable is categorical and contains two levels, with two mutually exclusive groups of subjects
- No significant outliers in the two groups
- Normality: The data for each group should be approximately normally distributed, otherwise, the Mann-Whitney U test shall be used.
- Homogeneity of variances: The variance of the dependent variable should be similar in each group

For equality of variances, Levene's test was run with the independent *t*-tests analysis to determine whether the variance of scores for the two groups was the same. The significance level for Levene's test was analysed, and a $p = .05$ or less meant the variance for the two groups was not the same, indicating a violation of the assumption. The researcher then analyzed data from the "Equal variances not assumed" column (Pallant, 2020). In this study independent samples *t*-tests will be used to compare the sample means of self-leadership differed based on gender, age, years practicing as an ANP, percentage of shifts working alone, job satisfaction and intention to leave

3.11.4. ANOVA

The ANOVA was appropriate because the study contained a continuous dependent variable, namely, self-leadership. Additional reasons for appropriateness included testing differences between different groups; three or more groups were being investigated; and more than one level or independent variable was being used (Salkind, 2007). The test indicated whether a relationship existed between the level of self-leadership based on the number of years ANPs were in their current position.

In these analyses, the Brown-Forsythe test was used to test the assumption of the equality of variances, with this test being used as it is a more robust version of Levene's test. A probability value less than .05 associated with this test indicates that the assumption of the equality of variances was violated, while a probability value of .05 or above indicates that this assumption was not violated. In addition, Welch's ANOVA was conducted along with one-way ANOVAs, with the Welch's ANOVA being preferred in cases where the assumption of the homogeneity of variances was violated.

3.11.5. Chi-Square Test and Fisher Exact Test

The non-parametric Chi-square test and Fishers exact tests are appropriate when data is measured at the categorical (nominal) level to test whether the difference between the expected and observed frequencies was significant (Connolly, 2019; Sylvia and Terhaar, 2018). The assumptions for the Chi-square test are that fewer than 20% of the cells have expected cell counts of less than five, the cases are independent of each other and each case should have a pair of values to compare (Miah, 2016).

Both the Chi-square test and Fishers exact tests rely on computing the *p*-value, with the Chi-square test more suitable for larger sample sizes where the contingency table exceeds 2 X 2 (Sylvia and Terhaar, 2018). In this study the Chi-square test was used to analyse the relationship between the variables of job satisfaction and intention to leave and the demographic variables collected. With respect to the relationship between job satisfaction and the number of years the ANP was in their current position the Fishers exact test was used because more than 20% of cells had expected frequencies < 5.

3.11.6. Correlation

A correlation coefficient (previously named the Pearson product-moment correlation coefficient) is a statistical technique used to investigate the relationship between two variables, most appropriately numerical data (Comiskey and Dempsey, 2013). Correlation graphically expresses the direction and magnitude of the linear relationship between two continuous variables, when an experimental design is unfeasible (Pallant 2020). The linear relationship close to + 1 indicates that two variables are increasing together while a value close to - 1 indicates a negative linear relationship. Graphing the two variables against one another illustrates the linearity or otherwise of relationship, and therefore generating scatter plots of the variables to check for linearity is the first step in studying the strength and direction of a relationship between two variables (Schneider *et al.*, 2010; Sedgwick, 2012). Importantly, while correlational data represent the relatedness of variables, a cause-and-effect relationship between the variables cannot be assumed (Pallant 2020). To determine the strength of the relationship between variables the following values will be used; small r = .10 to .29, medium/moderate r =.30 to .49 and large/ strong r =.50 to 1.00 (Pallant 2020).

The assumptions for Pearson's r co-efficient are each variable is ratio level, each case has a pair of values, there are no outliers, variables are normally distributed, there is a linear relationship between the variables and there is homogeneity of variance (i.e. homoscedasiticity exists) (Meyers et al 2016). In this study Pearson's correlation co-efficients were used to examine the relationships between self-leadership, its three dimensions and the commitment to the workplace, work engagement and influence at work variables.

3.11.7. Multiple Regression

Multiple regression analysis was used in this study to examine factors associated with self-leadership for ANPs. Multiple regression analysis examines how a dependent or response variable may be influenced by its interaction with multiple (two or more) independent variables (Le and Eberly, 2016). Multiple regression analysis can also be used to obtain the unique contribution (strength and direction) of each independent variable (Kros and Rosenthal, 2016). Multiple regression analysis is suited to non-experimental research design, where manipulating independent variables in the experiment would be difficult or even unethical (Keyton, 2020). Therefore regression allows researchers to study variables that cannot be experimentally manipulated

To be valid a multiple linear regression must meet a number of assumptions (Coolidge, 2021; Kellar *et al.*, 2013; Pallant, 2020). The sample must be representative of the population to which the inferences will be applied (Kellar *et al.*, 2013). The population in this research were ANPs practicing in Ireland, and the results will inform this group. The dependent variable should have a normal distribution and should be normally distributed for every value of each independent variable. The distribution of the dependent variable (self-leadership) and the independent study variables were normal.

3.11.7.1. Homoscedasticity

The assumption of homoscedasticity (the variance of the error term is the same across all the observations) must also be met and there must be a linear relationship between the dependent and independent variables (Kellar *et al.*, 2013). Homoscedasticity and a linear relationship between the dependent and independent variables were assessed using scatterplots. Homoscedasticity was met for all the variables and a near non-linear relationship was established. Analysis of collinearity statistics show this assumption has been met, as tolerance scores above 0.2. and variance inflation factor (VIF) scores were well below 10. These results are presented in Table 16.

3.11.7.2. Multicollinearity

Multicollinearity between the independent variables must be accounted for. Analysis of collinearity statistics will be performed by generating tolerance and variance inflation factors (VIF) statistics. Tolerance, which is the proportion of variance not accounted for by the other independent variables, can be used to measure collinearity. Measures of tolerance were obtained by treating each independent variable as a dependent variable and regressing it on the other independent variables. Tolerance scores below 0.2. and variance inflation factor (VIF) scores greater than .9 will be interpreted as multicollinear suggesting statistical instability (Dormann *et al.*, 2013; Kim, 2019). Details on variables can be seen in Table 16.

Table 17: Analysis of Multicollinearity for study independent variables

		Tolerance Score	VIF Score
Dependent: Influence at work			
	Commitment to the Workplace	.486	2.060
	Work Engagement	.785	1.275
	Job satisfaction	.575	1.739
	Intention to leave	.617	1.621
Dependent: Commitment to the Workplace			
	Influence at work	.814	1.228
	Work Engagement	.917	1.090
	Job satisfaction	.626	1.598
	Intention to leave	.698	1.433
Dependent: Work Engagement			
	Influence at work	.824	1.213
	Commitment to the Workplace	.575	1.740
	Job satisfaction	.550	1.819
	Intention to leave	.637	1.569
Dependent: Job Satisfaction			
	Influence at work	.844	1.185
	Commitment to the Workplace	.548	1.826
	Work Engagement	.768	1.302
	Intention to leave	.694	1.441
Dependent: Intention to Leave			
	Influence at work	.803	1.245
	Commitment to the Workplace	.542	1.846
	Work Engagement	.790	1.266
	Job Satisfaction	.616	1.624

3.11.7.3. Confounding Variables

Observational studies in healthcare and hospital management using cross-sectional research should adjust for confounders when testing associations (Asiamah *et al.*, 2021) to minimize the chance of a type 1 error. The multiple linear regression model was fitted with the covariates which had a *p*-value ≤0.25 in the univariate analysis to assess the effect on self-leadership. The inclusion of independent variables with a *p*-value ≤0.25 in the univariable analyses was based on the evidence that traditional levels such as 0.05 can fail in identifying variables known to be important (Bursac *et al.*, 2008; Hosmer *et al.*, 2013). The cut-off of $p \leq 0.25$ is supported by literature (Chowdhury and Turin, 2020; Zhang, 2016), and has been previously used in nursing and wider health research (Alrawashdeh *et al.*, 2021; Dias *et al.*, 2019; Esposito *et al.*, 2017; Etissa *et al.*, 2021). Age, years practicing and years in current position were considered to be potential confounding variables and were included in the regression model.

3.11.7.4. Dummy Variables

An assumption for multiple regression analysis that nominal variables are transformed into dummy variables. This study contains a number of nominal independent variables (i.e. Years in current position). After the sample description but prior to conducting inferential analysis, dummy variables were created. These categories were given numerical values before being entered into the regression model, to allow a more meaningful examination of these variables. The categories have to be represented by a set of dummy variables and coded appropriately, and the original variable, years of experience, replaced by these dummies. Each dummy variable contained at least 5% of the original variable values (Meyers *et al.*, 2017). Merging of the category of ANPs with less than one year of experience which did not contain at least 5% of the original variable values and this category was merged with those ANPs with between one and three years experience. All but one of the variables were treated as separate variables and assigned a value of 0 or 1. The variable that was transformed into a nominal variable with multiple categories was years in current position. The dummy variables are presented in Table 17.

Table 18: Transformation of nominal level variables to Dummy Variables

Variable	Values	Values used in Analysis
Years in current position	Less than 3 Years	0=Else
		1=1 to 3 years
	At least 3 years but less than 5 Years	0=Else
		1=3-5 years
	At least 5 years but less than 10 Years	0=Else
		1=5-10 years
	More than 10 years	0=Else
		1=>10 years

3.12. Summary

This chapter has outlined research methods, ethical considerations, the methods used for data collection, and the subsequent method of analysis. It has described the benefits of using a survey research approach as the main source of data collection, whilst acknowledging the limitations of this approach. Various statistical techniques will be used for data analysis, and this chapter outlined the justification for this approach. A confirmatory factor analysis supports the construct validity of the RSLQ and the results suggest that the hypothesized model fit the data well.

Chapter 4: Results

4.1. Introduction

This chapter reports on the results of a survey of Advanced Nurse Practitioners (ANPs). The results are presented in relation to the research aims and questions. The research question which guided this study was: what is the relationship between ANPs' Self-Leadership and Commitment to the Workplace, Work Engagement, Influence at Work, Job Satisfaction, and Intention to Leave?

The first section (4.2) outlines the demographic profile of ANPs who participated in the study. This is followed by an examination of ANP's Self-Leadership (section 4.3) and the psychosocial variables of interest in this study (Commitment to the Workplace, Work Engagement and Influence at Work). The next section reports on the univariable analysis of factors associated with Self-Leadership, which is then followed by section 4.6 which reports on the multivariable analysis. The final section explores the factors associated with Job Satisfaction and Intention to Leave in relation to the demographic profile reported Self-Leadership of the respondents. (Appendix 11 presents the univariable study findings with multiplicity adjustment included and Appendix 12 contains the syntax file for the analyses in this study).

The research objectives are:

- To measure the Self-Leadership abilities of ANPs by measuring their Self-Leadership skills, behaviours and cognitions
- To examine the relationship between Self-Leadership levels and the demographic profile of ANPs
- To measure if a relationship exists between ANPs' Self-Leadership and a number of psychosocial factors

The research hypotheses are:

- H1: There is a relationship between ANPs' Self-Leadership and demographic and work profile.
- H2: There is a relationship between ANPs' Self-Leadership and psychosocial job characteristics.

These hypotheses will be answered by the following research questions:

1. Is there a relationship between Commitment to the Workplace and Self-Leadership for ANPs?
2. Is there a relationship between Work Engagement and Self-Leadership for ANPs?
3. Is there a relationship between Influence at Work and Self-Leadership for ANPs?
4. Is there a relationship between Job Satisfaction and Self-Leadership for ANPs?
5. Is there a relationship between Intention to Leave and Self-Leadership for ANPs?

4.2. Sociodemographic and Professional Profile of the Sample

This section describes the sample of ANPs who responded to the survey. In total, the survey was sent to 245 email addresses. This comprised of 151 email addresses sent by the Health Service Executive (HSE) and to 94 email addresses sent by the Irish Association of Advanced Nurse and Midwife Practitioners (IAANMP) on behalf of the researcher (Appendix 5). Of those distributed, ten were not delivered for a variety of reasons including invalid email addresses and security/permission issues. In total n = 155 ANPs commenced the online survey; one respondent completed only the demographic section and did not answer any items from the remaining sections while a second respondent did not answer greater than 25% of the items measuring Self-Leadership (these two respondents' data were excluded from the analysis). This resulted in a valid response of 153 ANPs from a total of 453 ANPs on the advanced practice section of the NMBI Register. Hence, it is estimated that 33.8% of the study population were included in this study (Appendix 1). Table 18 outlines the profile of ANPs who completed the survey. The majority of respondents were female (82.2%, n=125) and approximately half were aged over 45 years (52.9%, n = 81). Half of the respondents reported practicing as an ANP for three years or less (50.3%, n = 76) with more than two-thirds of respondents (69.3%

n = 106) reporting that they worked approximately 50% or more of their shifts as a lone practitioner.

Table 19: Sociodemographic and Professional Profile of Respondents (n = 153)

	n (%)
Gender (n = 152)	
Female	125 (82.2)
Male	27 (17.8)
Age Category (n = 153)	
25-44 Years	72 (47.1)
45-64 Years	81 (52.9)
Years Practicing as an ANP (n = 151)	
≤3 years	76 (50.3)
>3 years	75 (49.7)
Years in Current Position (n = 153)	
< 3 years	64 (42.1)
3-4 years	27 (17.8)
5-9 years	29 (18.4)
≥10 years	33 (21.7)
% of Shifts Working as a lone practitioner (n = 153)	
<50%	47 (30.7)
≥50%	106 (69.3)

4.3. Self-Leadership

This section reports on the results of the measures of Self-Leadership. Self-leadership comprises of three dimensions: behaviour-focused strategies (BFS), constructive thought strategies (CTPS) and natural reward strategies (NRS). The behaviour focused strategies include subscales measuring self-goal, self-reward, self-punishment, self-observation, and self-cueing. The constructive thought pattern strategies comprise subscale measures of self-talk, evaluating beliefs and assumptions and visualising successful performance. The natural reward strategies measure those skills, behaviours and cognitions that focus on natural rewards. Higher scores indicate increased use of behaviour-focused strategies, natural reward strategies, and constructive thought strategies by the study respondents. (Summary statistics for the responses to the RSLQ individual items and subscales are presented in Appendix 13).

Respondents rated all dimensions of the RSLQ higher than the midpoint value in the respective theoretical ranges (Table 19). The mean and standard deviation (M (SD)) are reported, with constructive thought pattern strategies having the lowest mean score and natural reward

strategies having the highest mean score. Ranges were broad, with minimum and maximum values representing almost the entire range of potential responses of these scales.

Table 20: Descriptive Statistics for overall RSQL and dimensions (n = 153)

Scale	Theoretical Range	M (SD)	Min, max	N of Items
†Behaviour Focused strategies	1-5	3.30 (.61)	1.94, 4.69	18
†Constructive thought pattern strategies	1-5	3.12 (.72)	1.52, 4.93	12
†Natural Reward strategies	1-5	3.66 (.67)	1.60, 5.00	5
***RSLQ – Total Score**	**1-5**	**3.34 (.54)**	**1.96, 4.76**	**35**

***** Total RSLQ †Self-Leadership Dimension Note: In all scales lower scores indicate lower levels of the variable reported and higher scores indicate higher levels of behaviour focused strategies, constructive thought pattern strategies, natural reward strategies and overall Self-Leadership

4.4. Psychosocial Variables

The following section reports on the psychosocial variables of interest which were measured using scales from the COPSOQ III. These included: Commitment to the Workplace, Work Engagement and Influence at Work. Measures of central tendency and variability for these measures are outlined in Table 20. On the scales that ranged from 0 to 100, where higher scores represent increased levels of the psychosocial variable measured, there were relatively high scores in relation to Work Engagement (M = 75.22, SD = 16.67), Commitment to the Workplace (M = 65.07, SD = 22.11) with Influence at Work (M = 62.01, SD = 16.24) rated the lowest of the three domains.

Table 21: Descriptive Statistics for COPSOQ Scales n = 153

Scale	Theoretical Range	M (SD)	Min, Max	Median	N of Items
COPSOQ- Commitment to the Workplace	0-100	65.07 (22.11)	0.00, 100	70.00	5
COPSOQ- Work Engagement	0-100	75.22 (16.67)	16.67, 100	75.00	3
COPSOQ- Influence at Work	0-100	62.01 (16.24)	12.50, 91.67	66.67	6

Note: In all scales lower scores indicate lower levels of the variable reported and higher scores indicate higher levels of Self-Leadership, Commitment to the Workplace, Work Engagement and Influence at Work.

4.5. Factors associated with Self-Leadership - Univariable Analysis

4.5.1. Self-Leadership, sociodemographic and professional profile

This section examines the relationships between Self-Leadership (measured by the RSLQ), its three dimensions (behaviour focused strategies, constructive thought pattern strategies and natural reward strategies) and the sociodemographic and professional profile of the respondents. To test the hypothesis that there is a relationship between ANPs' Self-Leadership and demographic profile and work profile (Hypothesis 1) the following demographic and work profile variables were examined in relation to Self-Leadership.

4.5.2. Self-Leadership and Gender

Table 21 shows the results of the independent samples *t*-tests examining differences in the means of RSLQ, and the dimensions of behaviour focused strategies, constructive thought pattern strategies and natural reward strategies in relation to gender.

The assumption of the equality of variances was violated for the dimension of constructive thought patterns ($p = 0.04$) and the overall Self-Leadership score ($p < 0.01$). In these analyses the *t*-tests were conducted not assuming equality of variances; independent-samples *t*-tests were conducted assuming the equality of variances in the remaining tests.

Gender differences were found for the dimension of behaviour focused strategies (p = 0.05), with females reporting statistically significant higher mean scores (Table 21). The standardised difference between two means was determined by calculating Cohen's *d* with the values found indicating a small effect size. No other significant differences were found based on respondents' gender.

Table 22: Independent-samples t-test results for overall RSLQ and dimensions by respondent gender (n=152)

Scales	Male (n = 27)	Female (n = 125)	DM‡ [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
†*BFS*	3.09 (0.68)	3.34 (0.93)	-0.26 [-.51, -.01]	0.05	.31
†*CTPS*	3.28 (0.86)	3.08 (0.68)	0.20 [-.10, .50]	0.28	.26
†*NRS*	3.54 (0.73)	3.68 (0.65)	-0.14 [-.42, .14]	0.33	.20
***RSLQ-Total Score**	**3.28 (0.67)**	**3.35 (0.50)**	**-0.06 [-.34, .22]**	**0.50**	**.12**

Note: $p \leq 0.05$; *n = 153 BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; †Self-Leadership Dimension; ‡DM: Difference in Means; ¶Confidence Interval

4.5.3. Self-Leadership and Age

Independent samples *t*-tests were conducted to compare the means of the total RSLQ and its dimensions based on ANP age (Table 22). The assumption of the equality of variances was not violated for the included variables based on a series of Levene's tests, and so independent-samples *t*-tests were conducted assuming equality of variances. The standardised difference between two means was determined by calculating Cohen's *d* with the values found indicating trivial effect sizes. No significant differences were found in reported Self-Leadership based on respondents' age in these analyses.

Table 23: Independent-samples t-test results for overall RSLQ and dimensions by respondent age (n = 152)

Scales	25-44 Years	45-64 Years	DM‡ [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
†*BFS*	3.34 (0.59)	3.27 (0.63)	0.67 [-.13, .26]	0.49	.11
†*CTPS*	3.06 (0.68)	3.18 (0.75)	-0.12 [-.35, .11]	0.31	-.16
†*NRS*	3.64 (0.62)	3.68 (0.71)	-0.04 [-.25, .18]	0.73	-.06
***RSLQ-Total Score**	**3.32 (0.50)**	**3.35 (0.57)**	**-0.03 [-.20, .14]**	**0.72**	-.06

Note: *p ≤0.05; n = 153 BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; †Self-Leadership Dimension; ‡DM: Difference in Means; ¶Confidence Interval

4.5.4. Self-leadership and years practicing as an ANP

Independent samples *t*-tests were performed to determine whether the number of years practicing as an ANP influenced Self-Leadership (Table 23). The assumption of equality of variances was not violated, and so independent-samples *t*-tests were conducted assuming equality of variances. The results of these *t*-tests did not indicate significant mean differences except in the case of natural reward strategies. For natural reward strategies, ANPs practicing more than 3 years were found to have significantly higher scores compared to ANPs practicing less than or equal to 3 years. The standardised difference between two means was determined by calculating Cohen's *d* with the values found indicating a trivial or small effect size with respect to the variables included.

Table 24: Independent-samples t-test results for overall RSLQ and dimensions by years practicing as an ANP (n = 153)

Scales/Dimensions	≤3 years (n = 76)	>3years (n = 77)	DM‡ [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
†*BFS*	3.32 (0.58)	3.29 (0.63)	.02 [-.17, .21]	0.82	.05
†*CTPS*	3.06 (0.66)	3.18 (0.77)	-.12 [-.35, .11]	0.30	.17
†*NRS*	3.54 (0.64)	3.77 (0.68)	-.22 [-.44, -.02]	**0.03**	.35
***Total RSLQ**	**3.28 (0.49)**	**3.39 (0.57)**	**-.11 [-.28, .06]**	**0.20**	**.21**

Note: *p ≤0.05; n = 153 BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; †Self-Leadership Dimension; ‡DM: Difference in Means; ¶Confidence Interval

4.5.5. Self-Leadership and years in current position

To determine if years in current position influenced ANPs' Self-Leadership skills, behaviours, and cognitions, Analysis of Variance (ANOVA) tests were conducted (Table 24). The Brown-Forsythe test was used to test the assumption of equal variances and was found to be statistically significant for all variables except for the constructive thought patterns dimension. A one-way ANOVA was conducted for the constructive thought patterns variable, and a significant difference was not found between the groups (p = 0.14). For each of the other variables, a Welch's ANOVA was performed, and all were statistically significant (p = 0.004 for behaviour focused strategies, p = 0.001 for natural reward strategies and p = 0.004 for overall self-leadership) indicating that number of years spent in current position was associated with the behaviour focused strategies and natural reward strategies dimensions and overall Self-Leadership.

Post-hoc pairwise comparisons were performed using the Games-Howell test because the assumption of the equality of variances was violated, and the Games-Howell test does not assume the equality of variances. Regarding behaviour focused strategies, respondents with 3-4 years in their current position had significantly higher scores than those with 5-9 years' experience (Difference in Means =.61, 95% CI: [.17, 1.03], p = 0.002) and those with 10 or more years' experience (Difference in Means = .45, 95% CI: [.18, 1.03], p = 0.002).

For natural reward strategies, ANPs practicing in their current position for 3-4 years had significantly higher scores than those practicing less than three years (Difference in Means = .53, 95% CI: [.18, .88], p = 0.001) and those practicing 5-9 years (Difference in Means = .59, 95% CI: [.16, 1.02], p = 0.003). Similarly, for overall Self-Leadership, ANPs practicing 3-4 years in their current position had significantly higher scores than those practicing less than three years (Difference in Means = .41, 95% CI: [.08, .74], p = 0.01) and those practicing 5-9 years (Difference in Means =.53, 95% CI: [.15, .90]), p = 0.002). To measure the effect sizes in the ANOVA models the η squared was calculated. Small effect sizes were found in all cases.

Table 25:Analysis of variance (ANOVA) overall RSLQ and dimensions among ANPs by years in current position (n = 153)

Scales	Mean (SD)				ANOVA (p)	η^2	*p*-value for Post-Hoc Comparison Using GH[c, d]		
	<3yrs (n=64)	3-4yrs (n=27)	5-9yrs (n=28)	≥10yrs (n=33)			< 3yrs vs. 3-4yrs	3-4yrs vs. 5-9yrs	3-4yrs vs. ≥10yrs
†*BFS*	3.31 (0.56)	3.64 (0.64)	3.04 (0.55)	3.20 (0.58)	0.004[a]	.10		0.002	0.03
†*CTPS*	3.02 (0.63)	3.43 (0.92)	2.98 (0.58)	3.18 (0.76)	0.14[b]	.05			
†*NRS*:	3.54 (0.61)	4.07 (0.55)	3.48 (0.65)	3.70 (0.74)	0.001[a]	.10	0.001	0.003	
***Total RSLQ**	**3.27 (0.46)**	**3.68 (0.57)**	**3.15 (0.45)**	**3.34 (0.61)**	**0.004[a]**	**.10**	**0.01**	**0.002**	

Note: **p* ≤0.05; n = 153 [a]*Welch ANOVA (BFS, NRS, Total RSLQ)* [b]*One-way ANOVA (CTPS), BFS:* Behaviour Focused Strategies Dimension; CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies * Total Self-Leadership †Self-Leadership Dimension DM: Difference in Means. [c]Games-Howell (GH) test. [d]Only statistically significant pairwise comparisons are reported

4.5.6. Self-Leadership and Working Alone

Independent samples *t*-tests were conducted to compare the means of the total RSLQ and its dimensions based on whether ANPs worked less than half or at least half of their shifts as a lone practitioner (Table 25). Assumption of equality of variances was not violated for any variables, and so independent-samples *t*-tests were conducted assuming equality of variances. No statistically significant relationships were found between the Self-Leadership variables and percentage of shifts worked as a lone practitioner. Effect size was measured using Cohen's *d*, with small effect sizes found.

Table 26: Independent-samples t-test results for overall RSLQ and dimensions by percentage of shift working alone (n = 153)

Scales/Dimensions	< 50% (n = 47)	≥ 50% (n = 106)	DM‡ [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
†*BFS*	3.27 (.60)	3.32 (.61)	-.04 [-.26, .17]	0.67	.08
†*CTPS*	3.10 (.64)	3.13 (.75)	-.04 [-.29, .21]	0.77	.04
†*NRS*	3.70 (.65)	3.64 (.68)	.06 [-.18, .29]	0.64	.09
***Total RSLQ**	**3.33 (.52)**	**3.34 (.55)**	**.00 [-.19, .18]**	**0.99**	**.02**

Note: *p ≤0.05; n = 153 BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; †Self-Leadership Dimension; ‡DM: Difference in Means; ¶Confidence Interval

4.5.7. Self-Leadership and psychosocial factors

This section examines the relationships between Self-Leadership (overall), its three dimensions (behaviour focused strategies, constructive thought pattern strategies and natural reward strategies) and the three COPSOQ III scales: Commitment to the Workplace, Work Engagement, Influence at Work using Pearson's correlation coefficients (Table 26).

In relation to the dimension of behaviour focused strategies, a statistically significant correlation was found with Work Engagement which was moderate in strength (r = .395, p < .01, n = 153). Therefore, ANPs who reported higher levels of Work Engagement were more likely to report increased behaviour focused strategies.

Regarding constructive thought pattern strategies, a significant correlation was found with Work Engagement (r = .361, p < .01, n = 153). This correlation was positive and moderate in strength. These findings indicated that ANPs who reported higher increased Work Engagement also reported increased constructive thought pattern strategies.

Statistically significant correlations were found between natural reward strategies and Commitment to the Workplace (r = .210, p < .01, n = 153) and Work Engagement (r = .444, p < .01, n = 153). These correlations were found to be positive and were weak or moderate in strength. This indicates that ANPs who reported increased levels of Commitment to the Workplace and Work Engagement also used natural reward strategies to accomplish a positive focus on rewarding elements of tasks.

For the overall construct of Self-Leadership, a moderate and significant correlation was found with Work Engagement, (r = .495, p < .01, n = 153) and a weak significant correlation found with Commitment to the Workplace (r = .166, p < .01, n = 153). Therefore, ANPs who reported higher levels of Commitment to the Workplace and Work Engagement were more likely to report increased Self-Leadership scores.

Table 27: Pearson's Correlations between for overall RSLQ and dimensions and COPSOQ Scales (n = 153)

	CW	WE	IN
BFS	.153	.395**	.149
CTPS	.047	.361**	.018
NRS	.210**	.444**	.015
Total RSLQ	**.166***	**.495****	**.059**

* Correlation is statistically significant at .05 level. ** Correlation is statistically significant at the .01 level CW: Commitment to the Workplace, WE: Work Engagement, IN: Influence at Work, *BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies

4.6. Investigation of factors associated with Self-Leadership- Multivariable Analysis

Multiple linear regression analyses were conducted to investigate factors associated with Self-Leadership for advanced nurse practitioners. The dependent variables were ANP's behaviour focused strategies, constructive thought pattern strategies, natural reward strategies and overall Self-Leadership and the independent variables were sociodemographic and professional profile variables and psychosocial job characteristics. Independent variables with a p-value <0.25 in the univariable analyses were included in the linear regression models. Age, years practicing and years in current position were considered to be potential confounding variables and were included in all regression models. For each model, the unique contributions of the independent variables were calculated. The unique contribution of an independent variable is the difference in R^2 when all variables are included in the model versus when the independent variable in question is excluded from the model and is calculated by squaring the semipartial correlations.

Prior to performing the multivariable linear regression analyses, multicollinearity among the independent variables in each model was tested using the variance inflation factor (VIF), with VIF<10 considered to be acceptable. Multicollinearity was not an issue for the models (all VIF scores<5).

4.6.1. Behaviour focused strategies

The results of the multiple linear regression analysis investigating factors associated with behaviour focused strategies are presented in Table 27. The independent variables included in the model were work engagement, gender, years in current position, age and years practicing. Gender, years in current position, age and years practicing were included as these variables had a *p*-value <0.25 in the univariable analyses

The model was significant, p <.001, with the adjusted coefficient of determination (adjusted R^2), indicating that the model explained approximately 23.0% of the variance in behaviour focused strategies. Work Engagement was a significant factor, B = .015, 95% CI [.009, .021], p <0.001. The positive regression coefficient indicates that as ANPs Work Engagement increases, their use of behaviour focused strategies also increases, independent of gender, years in current position, age or years practicing. Work engagement uniquely explained 14.4% of the variance in behaviour focused strategies.

Years in current position was also statistically significant in the model ($p <$ 0.01) indicating that ANPs use of behaviour focused strategies is affected by the number of years they spend in their current position. Those ANPs who were in their current position between three and five years reported significant more use of behaviour focused strategies than ANPs in their current position more than 10 years ($p <$ 0.01). Years in current position uniquely explained 6.0% of the variation in behaviour focused strategies.

Table 28: Multiple linear regression with Work Engagement, gender, years in current position, age and years practicing included as independent variables for behaviour focused strategies, n=151

Variables	Regression Coefficient	95% Confidence Interval		*p* value
		Lower Bound	Upper Bound	
Work Engagement	.015	.009	.021	<.001
Gender				0.22
Male	Reference			
Female	.145	-.086	.375	
Years in Current Position				< 0.01
<3 years	Reference			
3-4 years	.281	-.041	.604	
5-9 years	-.201	-.544	.142	
>10 years	-.103	-.415	.208	
Age				0.66
25-44 years	Reference			
45-64 years	-.041	-.225	.143	
Years Practicing				0.96
≤3 years	Reference			
>3 years	.008	-.266	.281	

4.6.2. Constructive thought pattern strategies

The results of the multiple linear regression analysis investigating factors associated with constructive thought pattern strategies are presented in Table 28. The independent variables included in the model were work engagement, years in current position, age and years practicing. Years in current position, age and years practicing were included as these variables had a *p*-value <0.25 in the univariable analyses.

The regression model was statistically significant, p <0.001, with the adjusted R-squared indicating that 13.1% of the variation in constructive thought pattern strategies was explained by this regression model. Work Engagement was statistically significant , B = .016, 95% CI [.009, .023], p <0.001, indicating that those ANPs that report higher levels of Work Engagement also report increased use of constructive thought pattern strategies, independent of years in current position, age and years practicing as an ANP. Work engagement uniquely

explained 11.4% of the variance in constructive thought pattern strategies. No other variables were statistically significant in the model.

Table 29: Multiple linear regression with Work Engagement, years in current position, age and years practicing included as independent variables for constructive thought pattern strategies, n=152

Variables	Regression Coefficient	95% Confidence Interval		*p* value
		Lower Bound	Upper Bound	
Work Engagement	.016	.009	.023	<0.001
Years in Current Position				0.27
<3years	Reference			
3-4years	.300	-.106	.706	
5-9years	-.034	-.465	.398	
>10years	.084	-.307	.475	
Age				0.45
25-44 years	Reference			
45-64 years	.088	-.142	.317	
Years Practicing				0.84
≤3 years	Reference			
>3 years	.036	-.308	.381	

4.6.3. Natural reward strategies

The results of the multiple linear regression analysis investigating factors associated with natural reward strategies are presented in Table 29. The independent variables included in the model were work engagement, commitment to the workplace, years practicing as an ANP, years in current position and age. Years practicing as an ANP, years in current position and age were included as these variables had a *p*-value <0.25 in the univariable analyses.

The regression model was statistically significant $p = <.001$, with an adjusted R^2 of 23.9%. Work Engagement was statistically significant, $B = .017$, 95% CI [.010, .023], $p <0.001$, with the positive regression coefficient indicating that as ANPs' Work Engagement increases, their use of natural reward strategies also increases. Work engagement uniquely explained 12.3% of the variance in natural reward strategies.

Years in current position was also statistically significant ($p = 0.03$), indicating that ANPs use of natural reward strategies is affected by the number of years they spend in their current position. ANPs in their current position between five and nine years had significantly less use of natural reward strategies compared with those in their current position 3-4 years. Years in current position uniquely explained 4.8% of the variation in natural reward strategies.

Table 30: Multiple linear regression with Work Engagement, years practicing, years in current position and age included as independent variables for natural reward strategies, n=152

Variables	Regression Coefficient	95% Confidence Interval		*p* value
		Lower Bound	Upper Bound	
Work Engagement	.017	.010	.023	<0.001
Commitment to the Workplace	.001	-.003	.006	0.56
Years Practicing				0.14
≤3 years	Reference			
>3 years	.223	-.076	.521	
Years in Current Position				0.03
<3years	Reference			
3-4years	.290	-.061	.642	
5-9years	-.193	-.566	.180	
>10years	-.002	-.340	.337	
Age				0.91
25-44 years	Reference			
45-64 years	.012	-.187	.210	

4.6.4. Overall Self-Leadership

The results of the multiple linear regression analysis investigating factors associated with overall Self-Leadership are presented in Table 30. The independent variables included in the model were work engagement, commitment to the workplace, years practicing as an ANP, years in current position and age. Years practicing as an ANP, years in current position and age were included as these variables had a *p*-value <0.25 in the univariable analyses

The regression model was statistically significant, $p<.001$, with an adjusted R^2 of 28.0%. Work Engagement was statistically significant, $B = .017$, 95% CI [.011, .022], $p <0.001$. with the

positive regression coefficient, indicating that ANPs who reported higher levels of Work Engagement also reported greater overall Self-Leadership. Work Engagement uniquely explained 18.4% of the variance in overall Self-Leadership.

Years in current position was also statistically significant (p = 0.008), indicating that ANPs overall Self-Leadership is affected by the number of years they spend in their current position. ANPs in their current position 3-4 years had significantly higher overall Self-Leadership compared with those in their current position less than three years, those in their current position between five and nine years and those in their current position ten years or more. Years in current position uniquely explained 5.8% of the variation in overall Self-Leadership.

Table 31: Multiple linear regression with Work Engagement, Commitment to the Workplace, years practicing, years in current position and age included as independent variables for overall Self-Leadership, n=152

Variables	Regression Coefficient	95% Confidence Interval		*p* value
		Lower Bound	Upper Bound	
Work Engagement	.017	.011	.022	<0.001
Commitment to the Workplace	-.001	-.005	.003	0.55
Years Practicing				0.49
≤3 years	Reference			
>3 years	.082	-.152	.316	
Years in Current Position				<0.01
<3years	Reference			
3-4years	.279	.003	.554	
5-9years	-.139	-.432	.153	
>10years	-.015	-.280	.250	
Age				0.69
25-44 years	Reference			
45-64 years	.032	-.124	.188	

4.7. Investigation of factors associated with satisfaction/intention to leave

This section reports on respondents' levels of job satisfaction and their intention to leave. The majority of respondents (83.0%, n = 127) reported that they were satisfied with their job and reported that they did not intend to leave their current employment in the next year (68.0%, n = 104).

4.7.1. Investigation of factors associated with job satisfaction

Data were stratified by satisfied or dissatisfied in order to understand the relationship between Job Satisfaction and the demographic variables measured in this study, gender, age, years practicing, years in current position and percentage of shifts working alone. No significant relationships were found between job satisfaction and gender (p = .83), age (p = .92), years practicing as an ANP (p = .37), years in current position (p = .63), or the percentage of shifts working as a lone practitioner (p = .16) (Table 31).

Table 32: Relationship between Job Satisfaction, demographic variables and percentage of shifts worked as a lone practitioner

	Satisfied	Dissatisfied	*p*
	n (%)	n (%)	
Gender (n = 153)			0.83[a]
Male	22 (81.5)	5 (18.5)	
Female	104 (83.3)	21 (16.7)	
Age (n = 153)			0.92[a]
25-44 Years	60 (83.3)	12(16.7)	
45-64 Years	67 (83.0)	14 (17.0)	
Years Practicing (n = 152)			0.37[a]
≤3Years	61 (80.3)	15 (19.7)	
>3Years	66 (84.4)	11 (15.6)	
Years in Current Position (n = 153)			0.63[b]
< 3years	55 (85.9)	9 (14.1)	
3-4 years	22 (81.5)	5 (18.5)	
5-9 years	24 (85.7)	4 (14.3)	
≥10 Years	25 (75.8)	8 (24.2)	
% of Shifts Working Alone (n = 153)			0.16[a]
< 50%	42 (89.6)	5 (10.4)	
≥50% or more	85 (80.2)	21(19.8)	

[a] p value from Chi-Square Independence Test. [b] p value from Fishers Exact Test

Independent-samples *t*-tests were conducted to compare means of overall Self-Leadership and its three dimensions based on ANPs reported job satisfaction (Table 32). The assumption of the equality of variances was not violated, and so the independent-samples *t*-tests were conducted assuming the equality of variances. The results of these *t*-tests did not indicate significant mean differences based on Job Satisfaction.

Table 33: Independent-samples t-test results for overall Self-Leadership and dimensions by job satisfaction (n = 153)

Scales/Dimension	Satisfied with role (n = 127)	Dissatisfied with role (n = 26)	DM‡ [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
†*BFS*	3.30 (.59)	3.31 (.69)	.01 [-.24, .27]	0.93	.02
†*CTPS*	3.09 (.69)	3.28 (.83)	.20 [-.11, .50]	0.20	.25
†*NRS*	3.66 (.65)	3.64 (.77)	-.02 [-.30, .26]	0.88	.03
***Total RSLQ**	**3.33 (.51)**	**3.40 (.64)**	**.07 [-.16, .30]**	**0.55**	**.12**

Note: *p ≤0.05; n = 153 BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; †Self-Leadership Dimension; ‡DM: Difference in Means; ¶Confidence Interval

4.7.2. Investigation of factors associated with intention to leave

An examination of the relationship between intention to leave in the next year and the demographic variables measured showed no statistically significant differences for gender (*p* = .21), age (*p* = .98), years practicing as an ANP (*p* = .60), years in current position (*p* = .55), or the percentage of shifts ANPs worked as a lone practitioner (*p* = .25) (Table 33).

Table 34: Relationship between Intention to Leave, demographic variables and types of shifts worked

	Yes	No	p[a]
	n (%)	n (%)	
Gender (n = 153)			0.21
Male	11 (40.7)	16 (59.3)	
Female	38 (30.2)	87 (69.8)	
Age (n = 153)			0.98
25-44 Years	23 (31.9)	49 (68.1)	
45-64 Years	26 (32.1)	55 (67.9)	
Years Practicing (n = 152)			0.60
≤3Years	25 (32.9)	51 (67.1)	
>3Years	22 (28.9)	54 (71.1)	
Years in Current Position (n = 153)			0.55
< 3years	17 (26.6)	47 (73.4)	
3-4 years	11 (40.7)	16 (59.3)	
5-9 years	9 (32.1)	19 (67.9)	
≥10 Years	12 (36.4)	21 (63.6)	
% of Shifts Working Alone (n = 153)			0.25
<50%	12 (25.0)	37 (75.0)	
≥50%	35 (34.9)	69 (65.1)	

[a] p value from Chi-Square Independence Test

Independent samples *t*-tests were conducted to compare means of behaviour focused strategies, constructive thought pattern strategies, natural reward strategies and RSLQ based on ANPs' reported intention to leave (Table 34). The assumption of the equality of variances was not violated, and so the independent-samples *t*-tests were conducted assuming equality of variances.

For the dimension of constructive thought pattern strategies there was a significant difference in scores between the two groups with ANPs who reported an intention to leave having significantly higher scores (p = .01). ANPs who reported an intention to leave also had significantly higher overall Self-Leadership scores (p = .03).

Table 35: Independent-samples t-test results for overall Self-Leadership and dimensions by intention to leave (n=153)

Scales/Dimension	Do intend to leave (n = 49)	Do not intend to leave (n = 104)	DM‡ [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
†*BFS*	3.43 (.56)	3.25 (.62)	-.19 [-.39, .02]	0.08	.30
†*CTPS*	3.35 (.70)	3.01 (.70)	-.33 [-.57, -.09]	0.01	.49
†*NRS*	3.73 (.66)	3.63 (.67)	-.11 [-.33, .12]	0.36	.15
*Total RSLQ	3.48 (.51)	3.27 (.54)	-.20 [-.38, -.02]	0.03	.40

Note: $p \leq 0.05$; *n = 153 BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; †Self-Leadership Dimension; ‡DM: Difference in Means; ¶ Confidence Interval

Table 35 presents an examination of the relationship between job satisfaction and intention to leave which showed job satisfaction to be a significant indicator for intention to leave among the ANPs in this study (p <.001). Of those who were satisfied with their job, 20.5% (26/127) reported an intention to leave while 88.5% (23/26) of those who were dissatisfied with their job reported an intention to leave.

Table 36: Relationship between job Satisfaction and intention to leave (n = 153)

	Intend to Leave	Do not intend to Leave	*p*[a]
	n (%)	n (%)	
Job Satisfaction			<.001
Satisfied	26 (53.1%)	101 (97.1%)	
Dissatisfied	23 (46.9%)	3 (2.9%)	

[a] *p* value from Chi-Square Independence Test

4.8. Conclusion

This cross-sectional, quantitative study examined the Self-Leadership behaviours of advanced nurse practitioners (ANPs) working in the Irish health service and determined whether a relationship existed between Self-Leadership capacity and psychosocial outcomes such as Commitment to the Workplace, Work Engagement, Influence at Work, Job Satisfaction and Intention to Leave. The first section presented the demographic profile of the ANP respondents. Subsequent sections examined the relationship between Self-Leadership and the psychosocial variables of interest in this study (Commitment to the Workplace, Work Engagement and Influence at Work) among ANPs. Univariable analysis was conducted to investigate factors associated with Self-Leadership, followed by multivariable analysis. Finally, the relationship between Self-Leadership and the outcomes of Job Satisfaction and Intention to Leave were explored. The main finding was that a significant positive relationship was found between work engagement and self-leadership and each its dimensions, even when accounting for potential confounders; the results will be discussed in the following chapter.

Chapter 5: Discussion Chapter

5.1. Introduction

Leadership has been identified as a core part of the ANP role (Begley *et al.*, 2014; Elliott, 2016; Fealy *et al.*, 2011; Giles *et al.*, 2018; Higgins *et al.*, 2014; Lockwood *et al.*, 2021; Wood *et al.*, 2021). As discussed in Chapter One, leadership in advanced practice requires ANPs demonstrate self-leadership as well as leading others, and leading at an organisational level. A review of the published literature reports that ANPs operationalise their leadership role by advising and supporting staff (Baldwin *et al.*, 2013; Giles *et al.*, 2016), influencing and co-ordinating care (Elliott *et al.*, 2013; Gordon *et al.*, 2017; O'Connor *et al.*, 2018), and influencing changes in healthcare practice (Anderson, 2018). Casey and O' Connor, (2021) however, assert that the leadership element of the ANP role remains underdeveloped and lacks visibility at both a clinical and organisational level. As highlighted by the literature review, much of the prior work on the leadership element of the ANP role has focused on the interpersonal approach examining the influence that ANP exert over others, resulting in little attention being paid to the intrapersonal level in which leadership originates within the ANP for the purpose of influencing and motivating oneself. It has been asserted that knowing and leading oneself is a prerequisite for leading and developing others (Boyatzis and McKee, 2013; Goldsby *et al.*, 2021; Hill and Lineback, 2011), and therefore it was important to consider self-leadership from the perspective of ANPs and to examine potential relationships with the psychosocial work environment given ANPs increased role expansion (Rosa *et al.*, 2020). The aim of this research therefore, was to examine the relationship between ANPs' self-leadership and commitment to the workplace, work engagement, influence at work, job satisfaction, and intention to leave.

It is important to highlight that this research was conducted during the COVID-19 pandemic, an event that had a deleterious effect on healthcare staff and impacted their psychosocial health (Koren *et al.*, 2021; Turgut *et al.*, 2022). The data collection period for this study was in July and August 2020, a time when many restrictions were in place on Irish society due to the pandemic and the effects of which impacted healthcare staff both in their workplaces but also in their private lives (Couper *et al.*, 2022). The respondents to this research were therefore providing ANP care during unprecedented times and this research offers insights into their views of their self-

leadership skills, behaviours and cognitions and the relationship with the psychosocial work environment during this time

This chapter discusses the results from a survey of ANPs undertaken to achieve the study's aim. Overall, the survey was representative of the population of ANPs registered in Ireland at the time of data collection, in that 33.8% of the study population returned valid responses. The first section of this chapter (Section 5.2) will discuss the self-leadership findings from this study. Section 5.3 will discuss self-leadership and its relationship to the demographic characteristics of ANPs. Section 5.4. will outline the relationship between self-leadership and the psychosocial variables including a key finding from this study which is that there is a positive relationship between overall Self-leadership and each of its dimensions: behaviour focused strategies (BFS), constructive thought pattern strategies (CTPS) and natural reward strategies (NRS) and levels of work engagement. Section 5.5 will discuss the strengths and limitations of the thesis. Finally, section 5.6 will discuss the implications for future research for nursing in terms of the finding's applicability to practice, before the concluding section.

5.2. Self-Leadership Abilities of ANPs

The ANPs who responded to this study reported high levels of self-leadership. As discussed in previous chapters, self-leadership has been identified as being important because as the most senior clinical nurses in most clinical settings, ANPs demonstrate significant autonomy and are expected to lead at a strategic level (Cooper *et al.*, 2019; Peacock and Hernandez, 2020). Self-leadership facilitates ANPs to achieve their personal and professional goals, to provide support, mentoring and guidance to other clinicians (Elliott *et al.*, 2013; Lutze *et al.*, 2018) and contribute to organisational outcomes by aligning care with organisational objectives (Marques-Quinteiro *et al.*, 2019). Self-leaders are more intrinsically motivated in their job without the need for formal external controls (Dorssen-Boog *et al.*, 2021). Self-leadership is a construct which first emerged from the organisational management literature and has been identified as a core component of the leadership role of ANPs (Anderson, 2018; O'Grady, 2021).

A review of the scholarly literature revealed that there is a dearth of research specifically examining self-leadership among ANPs. However, previous empirical studies involving

diverse groups of employees argue that self-leadership development is essential to organisations where a high degree of autonomy is necessary, and where the individual's autonomous motivation is pivotal to their performance outcomes. For example Megheirkouni, (2018) suggests that self-leadership is important in non-profit organisations who rely on volunteers where managers may have no real authority over them. Previous studies have focused on work areas where the individual employee's motivation is pivotal in performance outcomes such as Cristofaro and Giardino, (2020) who sampled 93 executives, Avcı and Kaya, (2021) who carried out a study with nursing and midwifery students and Kalra *et al.*, (2021) who studied behavioural self-leadership use in sales people. The commonality between each of these groups is that each of these roles involves significant autonomy and a requirement for self-influence to successfully achieve desired outcomes which Manz, (2015) argues are role contexts particularly suited to self-leadership. Self-leadership, therefore, is particularly relevant to ANPs who practice as clinical leaders and practice with a large degree of autonomy in managing their practice (Casey and O' Connor, 2021).

5.2.1. Behaviour focused strategies

ANPs in this study reported behaviour focused strategies higher than the midpoint of its theoretical range. This finding suggests that ANPs are using behaviour focused strategies in their role which Neck and Houghton, (2006) assert encourages positive, desirable behaviours that lead to successful outcomes, while suppressing negative, undesirable behaviours that lead to unsuccessful outcomes. Behaviour focused strategies help to increase self-awareness in order to facilitate behaviour change.

The ANPs in this study reported a higher level of behaviour focused strategies than workers in a variety of service industry roles including human resources, and therapy roles in the sports industry (Megheirkouni, 2018) however, the levels were lower than the mean behaviour focused strategies reported by nurses in a study examining self-leadership in healthcare workers by Ugurluoglu *et al.*, (2015). Behaviour focused strategies such as self-observation, self-goal setting, self-cueing, self-reward and self-correcting feedback are used by individuals to facilitate behavioural management (Neck and Manz, 2013). In clinical practice this study's respondents appear to use behaviour focused strategies which, Neck and Manz (2013) argue, facilitate ANPs to focus on difficult, but unattractive clinical tasks (such as a time consuming dressing change), which cannot be postponed or evaded that result in positive outcomes (e.g.

wound healing). One interpretation of the reason for increased behaviour focused strategies use in ANPs compared to the general workforce may include their practice as autonomous independent practitioners with individual responsibility for caseload management (Gibbons and Stoddart, 2018).

It has been suggested that the strategies adopted by ANPs to manage their own work behaviours are necessary given their role as senior decision makers within the clinical environment (Department of Health, 2019), who are often individually responsible for the outcomes of their decision making (e.g. the decision to discharge a patient without planned follow-up by a healthcare professional). However, it must be acknowledged that ANP respondents had lower use of behaviour focused strategies than the physicians, nurses and administrators surveyed by Ugurluoglu *et al.*, (2015). One explanation may be that, heretofore, in the Irish healthcare system ANPs had limited mobility due to regulatory restraints and it has been demonstrated that use of behaviour focused strategies decreases over time as total term of employment increases. It has been further suggested by Grigsby, (2019) that an awareness of "where you are" and "where you want to go" is important when individuals consider leadership development. Therefore, it can be argued that ANPs who are at the pinnacle of clinical nursing may have limited scope for increasing autonomy in terms of developing and operating their practice and may have less focus on enhancing their behavioural repertoire than their nursing and interdisciplinary colleagues who may be at a different stage of their career development.

5.2.2. Constructive thought pattern strategies

The reported constructive thought pattern strategies used by ANPs in this study are similar to those found by Megheirkouni, (2018) in a cohort of individuals working in sports organisation, and lower than those of respondents in Ugurluoglu et al's study which studied self-leadership in healthcare workers. As discussed in Chapter one, constructive thought pattern strategies refer to a process that ANPs can use to influence their thoughts in the way that is desired or consistent with their goals. Constructive thought pattern strategies require ANPs to recognise dysfunctional beliefs and attitudes and then replace them with positive beliefs, self-talk or mental imagery, which involves visualising success, (Neck *et al.*, 2019; Neck and Manz, 2013). For example, ANPs may use constructive thought pattern strategies to visualise an achievement to move beyond current circumstances. When contrasting the findings of this study to those of Ugurluoglu *et al.*, (2015), who also studied other healthcare employees, it may be argued that

ANPs who are clinically embedded find it challenging to move beyond their current circumstances. This difficulty to move beyond their current circumstances may be due to a plethora of influences including hospital crowding which requires ANPs to focus on the provision of clinical care (Freibott, 2017; Gaughan *et al.*, 2019) but also a perceived lack of support from operational managers (Fox *et al.*, 2018; Yuill, 2018) and a lack of a visible career pathway which encourage career development within the ANP role. Indeed, Luck *et al.*, (2015) argue that career development in ANPs is often haphazard or occurs as a result of serendipity. While there is a policy commitment to ANPs' contribution to the nursing profession's body of knowledge, contribution to research, and provision of leadership at a strategic and clinical level (Elliott, 2017; Lambert and Housden, 2017; NMBI, 2017), arising from this research it can be argued that there is a mismatch between the national level policy definitions and aspirations for ANP roles and their local operationalisation which prioritises the clinical role (Casey and O' Connor, 2021). In part, this may be because these non-clinical roles are poorly understood by operational managers, but also there is a paucity of clear guidelines for how these roles should be operationalised (Schober *et al.*, 2016).

5.2.3. Natural reward strategies

Some differences between this study's results and those in previous studies were also found for natural reward strategies use with Megheirkouni, (2018) reporting lower levels with workers in variety of service industry roles in the sports industry and Ugurluoglu *et al.*, (2015) higher in a group of hospital employees than those found for ANPs. As discussed in Chapter one, natural reward strategies refer to ANPs' positive views of tasks that need to be completed, which usually involve a belief in, commitment to, or enjoyment of, their work for its own value. ANPs may use natural reward strategies to actively modify tasks, through either perceptual or physical means, with the aim of creating positive feelings of competence and self-determination, which in turn strengthen performance enhancing, task-related behaviours (Amundsen and Martinsen, 2015; Neck *et al.*, 2019). Viewed as clinical experts within care environments (Coombs *et al.*, 2020; Gardner *et al.*, 2021; Sebach, 2021; Tyler *et al.*, 2018) it is reasonable to assume that ANPs would view themselves as possessing the feelings of competence needed for their specific role and the accomplishment of tasks. However, when compared to the findings of Avcı and Kaya, (2021) and Ugurluoglu *et al.*, (2015) it may be posited that the ANPs in this study use less natural reward strategies which it has been argued

increase motivation, self-determination and feelings of competence (Deci and Ryan, 2014; Neck *et al.*, 2019) than other healthcare workers. Self-determination theory argues that an individual's self-motivation is largely determined by the extent to which their behaviours or actions are autonomous or controlled (Deci and Ryan, 2014). It may therefore be argued that the under-leveraging of ANPs who are practicing to capacity rather than capability (Kraaij *et al.*, 2020; O'Connell *et al.*, 2014) results in their leadership ability being underused at a professional and organisational level and may be contributing to ANPs using less natural reward strategies than other healthcare workers.

5.2.4. Overall Self-Leadership

It was found that the respondents in this study reported relatively high levels of overall self-leadership. As highlighted, self-leadership is important for ANPs as they are autonomous practitioners who lead their own goal-directed activities (Lin, 2017). When compared to the findings of Avcı and Kaya, (2021) who studied nursing students, a group whose motivation is also pivotal to their performance outcomes, the ANPs in this current study reported lower use of self-leadership. One possible explanation may be that a cohesion and friendship which exists between student nurses as a result of the cooperation and support necessary to progress through their programmes (Carey *et al.*, 2018; Fagan and Coffey, 2019) is at odds with the isolation reported by ANPs (Wood *et al.*, 2021).The tenuous organisational position of the ANP (Thompson and McNamara, 2021b) may result in isolation from the wider healthcare team (Wood *et al.*, 2021). As discussed in Chapter one, ANPs practice in a third space which does not rest comfortably in either the nursing and medicine paradigm (Bhaba, 2016; Chulach and Gagnon, 2016). It can therefore be argued that, while ANPs reported the use of self-leadership strategies at a personal level, there is a need to involve ANPs in strategic leadership activities at an organisational level to derive the team and organisational benefits of self-leadership. To date the clinical aspect of the ANP role has been prioritised over the leadership and research aspects of their roles, and it has been argued that this disproportionate focus on clinical practice can be a barrier to motivation (Casey and O' Connor, 2021). It is likely that ANPs do not have the organisational flexibility to enact their self-leadership at an organisational level, and instead may be practicing by controlled motivation which maintains a focus on the clinical aspect of their role. It has been suggested that having individuals within the healthcare workforce managing particular tasks (such as prescribing, inserting IV access or ordering laboratory tests)

with rigid boundaries and an absence of flexibility has resulted in inefficiencies within healthcare (Moffatt *et al.*, 2014; Wise *et al.*, 2020). As previously discussed there may be an increasing reductionism and instrumentalisation of the ANP role due to the requirement to have patients seen as expediently as possible (Molina-Mula *et al.*, 2018; Rashotte, 2005). However, in addition to clinical expertise, ANPs are required to actively contribute to the nursing profession's body of knowledge, contribute to research, and provide leadership at a strategic and clinical level (Elliott, 2017; Lambert and Housden, 2017; NMBI, 2017). Arising from the results of this research, it can be argued that, while ANPs report use of self-leadership strategies, their use is lower than that of other healthcare workers and a contributing factor may be the lack of focus on the non-clinical aspects of the ANP role in general and the self-leadership role in particular. It is important therefore, that the social environments in which ANPs practice facilitate and encouraged the development of self-leadership skills so that ANPs can continue to grow from a psychological perspective which Deci and Ryan argue allow basic psychological needs are met.

5.3. Association between Self-leadership and Demographic Variables of ANPs

As discussed in earlier sections, self-leadership is a self-influence practice of understanding who you are, identifying your desired experiences and intentionally guiding yourself toward them by influencing your communication, emotions and behaviours (Browning, 2018). This study found that ANPs are self-leaders who possess the ability to intentionally guide themselves to achieve their personal and professional goals and objectives. One of the key findings from this study is that ANPs who have recently been appointed to their current position and those with more than five years' in position reported less use of self-leadership strategies than those who were in their current position between 3-4 years. These findings are supported in part by Ugurluoglu *et al.*, (2015), who found a negative-directional relationship between length of employment and use of behaviour focused strategies, with the authors suggesting that personal observation diminishes over time as people conform to organisational norms. Previous research highlights that recently registered ANPs rely on external leadership, mentorship from other clinicians and seek frequent evaluations (Faraz, 2019; Fitzpatrick and Gripshover, 2016), which may explain the finding that novice ANPs use less self-leadership strategies than those practicing between 3-4 years. It is of note that there was no relationship between number of years practicing as an ANP and ANPs' reported self-leadership, but there was a statistically

significant relationship between years in current position and self-leadership. It may be that of a degree of presenteeism - being physically present but not mentally engaged (Lui *et al.*, 2018) - may exist as ANPs who spend longer in their positions without an organisational imperative for them to contribute beyond their immediate clinical workload and consequently these ANP have less need to use self-leadership strategies. However, as presenteeism was not examined in this study further exploration of this is not possible. It should be noted that half of ANP respondents in this study were practicing for three years or less. This is likely as a result of the Department of Health's policy to increase the number of ANPs in the Irish health system to 2% of the nursing workforce (Department of Health, 2019). As use of self-leadership strategies has been shown to decrease over time, the respondents in this study, who were early advanced practice career stage, may have been expected to make increased use of self-leadership strategies (Ricketts *et al.*, 2012) but this was not found to be the case in the present study. Arising from this finding it is posited that self-leadership strategies are used less by ANPs who are longer in their current position, as the specialisation of the role, the restriction to one location, and skills required for the role, limit the options for advancement and the need for self-leadership strategies (Corbally and Lees-Deutsch, 2019). This finding contributes to a clearer understanding of the relationship between time in current position and use of self-leadership strategies.

The remaining demographic factors on which data were collected in this study were gender, age, years practicing as an ANP, and percentage of shifts working alone. Gender differences in self-leadership use and effectiveness have been the subject of previous research with significant difference found in the use of behaviour focused strategies (Bendell *et al.*, 2019). The results of this present study concur with previous work, (Darvin *et al.*, 2018; Hyde, 2005; Yount *et al.*, 2020) where no differences in self-leadership between genders was found but differ to Sheppard's, (2018) findings who found that female undergraduate students perceived themselves as having lower leadership ability than male students. Although there was no difference in self-leadership skills, behaviours and cognitions based on the respondents' age in the present study there are ambiguous findings about the effect of age on self-leadership behaviours. For example, Ricketts *et al.*, (2012) found that use of self-leadership skills may decrease with age, while conversely Kunagornpitak *et al.*, (2019) found that participants in the education sector who were aged 51 years and older had self-leadership behaviours higher than those who were aged 30 years and younger.

Previous studies have identified that the amount of time working as a lone practitioner is purported to affect the leadership potential of ANPs due to heavy workloads and lack of time to engage in leadership activities with other staff (Higgins *et al.*, 2014; Kerr and Macaskill, 2020). This study found that more than two-thirds of ANP respondents worked more than 50% of their shifts as a lone practitioner. While ANPs undoubtably interact with patients and with other clinicians during their work, ultimately this finding means that many ANPs do not report working as part of an established team. That no relationship was found between self-leadership and the percentage of time working as a lone practitioner can be explained as self-leadership is an intrinsic process that ANPs may use to self-direct one's thoughts and behaviours (Furtner *et al.*, 2015) and does not necessitate the involvement of other clinicians. That is not to suggest that ANPs are not using leadership strategies in their work, as there is evidence the contrary is true (Duignan *et al.*, 2021), rather, it does suggest that the organisational benefits of self-leadership may not be realised, as there is a prevailing theme of isolation from the wider healthcare team (Fox *et al.*, 2018; Wood *et al.*, 2021). While ANPs report the use of self-leadership strategies to control and direct their own behaviours (Ioannis, 2019), greater integration into the healthcare team may help in realising the enhanced team performance which, Goldsby *et al.*, (2021) asserts has been firmly established from self-leadership.

5.4. Relationship between Self-Leadership and Psychosocial Variables

5.4.1. Self-Leadership and Work Engagement

Benchmarks for the variables measured by the COPSOQ III have been established by Berthelsen *et al.*, (2020) (Table 36), and these provide a useful yardstick against which the results of this study can be compared. The sample for the benchmarks came from a random selection of gainfully employed individuals on the Swedish employment directory. The ANPs in this study reported higher levels of work engagement than the benchmark data compiled by Berthelsen *et al.*, (2020) which may be indicative of the dedication and altruism which are an aspect of healthcare roles (Aboshaiqah *et al.*, 2016; Missel *et al.*, 2020). Many healthcare professionals, including ANPs, face a psychosocial threat from the many uncertainties and the increased demands of the clinical setting (O'Rourke, 2021). As clinically embedded clinicians, the reported levels of work engagement suggests that ANPs have a role in leading in the clinical environment using autonomy and self-efficacy which are not only antecedents of work

engagement (O'Rourke 2021), but also cornerstones of ANP roles (Peacock and Hernandez, 2020; Thompson and McNamara, 2021).

A significant direct relationship between work engagement (measured by the COPSOQ III) and self-leadership was found in this study. Specifically, as ANPs' level of work engagement increased, the level of self-leadership and each of its dimensions also increased even when accounting for potential confounders. Work engagement is a construct which has emerged from the positive psychology movement and has been defined as a state of mind characterised by vigour, dedication and absorption (Schaufeli *et al.*, 2002). It is a focus of research due to its association with employee well-being and performance (Knight *et al.*, 2017). In healthcare, work engagement has been demonstrated to have a direct influence on employee well-being, care quality, work effectiveness, productivity, and patient satisfaction levels. In short, engaged workers are more productive than their peers (Osborne and Hammoud, 2017; Reijseger *et al.*, 2017). Work engagement among ANPs is increasingly important because of the confluence of many factors including increased turnover and the increasing demands within the healthcare environment (Brooks Carthon *et al.*, 2019; Chen *et al.*, 2007; Giménez-Espert *et al.*, 2020; Poghosyan and Aiken, 2015; Rosa *et al.*, 2020). This study's findings affirms previous work which report a positive relationship between self-leadership and work engagement within the context of professional nursing practice and also within the general workforce (Breevaart *et al.*, 2016; Dorssen-Boog *et al.*, 2021; Gomes *et al.*, 2015a; Knotts and Houghton, 2021; Park *et al.*, 2016; van Dorssen-Boog *et al.*, 2020). Neck *et al.*, (2019) describes how self-determination, self-management and purpose are associated with self-leadership which then acts as an emotional driver to increase work engagement (Harunavamwe *et al.*, 2020; Inam *et al.*, 2021) which explains the finding in this study of a direct relationship between self-leadership and work engagement.

Table 37: Comparison of current study findings and benchmarks of COPSOQ Scales n = 153

Scale	Current Study	Berthelsen *et al.*, (2020)
	Mean (SD)	Mean (SD)
COPSOQ- Commitment to the Workplace	65.07 (22.11)	64.7 (24.5)
COPSOQ- Work Engagement	75.22 (16.67)	69.4 (19.2)
COPSOQ- Influence at Work	62.01 (16.24)	50.2 (20.1)

Note: In all scales higher scores indicate higher levels of commitment to the workplace, work engagement and influence at work

Correlations between each of the dimensions of self-leadership and work engagement revealed significant findings. Regarding behaviour focused strategies, constructive thought pattern strategies, natural reward strategies and overall self-leadership, the results show a positive relationship between self-leadership and work engagement consistent with many other studies (Gomes *et al.*, 2015). Gomes *et al.*, (2015), following an analysis of responses of 337 nurses and doctors, found that respondents who reported higher levels of work engagement also reported greater self-leadership and found that work engagement was a mediator between self-leadership and individual motivation. Gomes et al.'s study used 18 items from the Portuguese version of the RSLQ and respondents scored items on a 7-point scale while work engagement was measured using nine items from the Utrecht Work Engagement Scale. Marques-Quinteiro *et al.*, (2019) used 21 items from the RSLQ and respondents scored items on a 5-point scale. This difference in instruments and scales makes direct comparison of each study's results difficult. Nonetheless, that Gomes et al found similar results to the present study with respect to a positive relationship between overall self-leadership and work engagement strengthens the argument that fostering self-leadership may improve outcomes related to work engagement in healthcare workers such as increased patient satisfaction, high patient safety ratings, in-role performance, organisational citizenship, extra-role performance, financial returns, and work effectiveness (Brooks Carthon *et al.*, 2019; Cesário and Chambel, 2017; Gomes *et al.*, 2015b; Pearson *et al.*, 2016; Ta'Amnha *et al.*, 2021; Wingerden and Poell, 2017). However, whether ANPs' work engagement extends beyond their clinical role or extends into the other role dimensions where they are expected to substantially contribute to areas such as organizational leadership, professional development, is unknown (Clarke *et al.*, 2021; Heinen *et al.*, 2019; Lamb *et al.*, 2018). It is acknowledged that ANPs spend a low proportion of their time engaged in and operationalising self-leadership (Casey and O' Connor, 2021; Rosser *et al.*, 2017).

Similarly, there is little evidence that ANPs are involved in leadership at a strategic level within the organisations in which they work (Elliott, 2017). Rather there are reports of isolation and a local focus of ANP roles (Wood *et al.*, 2021; Yuill, 2018). ANPs have a unique scope of practice which McGilton *et al.*, (2021) suggests positions them in an ideal position to act as self-leaders. Although this study has found relatively high levels of self-leadership among ANPs, this study's findings support those of Rosser *et al.*, (2017) who posit that ANPs need to learn to use self-leadership to extend their sphere of influence beyond their immediate clinical area. Arising from this study there is a need to challenge reductive' perceptions of ANPs which portray them as managing low acuity patients in practice, and instead nurture and challenge them to contribute at a systems level beyond the clinical interface.

5.4.2. Self-Leadership and commitment to the workplace, influence at work, job satisfaction and intention to leave

Several other important findings emerged from this study including significant relationships between ANPs' levels of self-leadership and commitment to the workplace and intention to leave. ANPs reported a broad range of self-leadership skills, behaviours and cognitions. This indicates that ANPs' use of specific behavioural and cognitive strategies is variable. These findings will be discussed further below.

Examining the work-related psychosocial states of ANPs is important, given their increased role expansion (Rosa et al 2020), tenuous position within the interdisciplinary team and concerns around workforce sustainability (Dillard-Wright and Shields-Hass 2021). The reasons identified in previous studies for increased psychosocial risk include excessive workloads, poor leadership, lack of support, and lack of opportunity for career development (Brandstätter *et al.*, 2016; Franklin and Gkiouleka, 2021; Gavin *et al.*, 2020; Shanafelt *et al.*, 2015). The remaining psychosocial variables measured in this study were commitment to the workplace, influence at work, job satisfaction and intention to leave. With respect to the concepts measured using the COPSOQ III, ANPs in this study reported similar levels of commitment to the workplace to benchmarks established by Berthelsen *et al.*, (2020) but they reported higher levels of work engagement (as previously discussed) and influence at work (Table 36).

This study found evidence of relationships between natural rewards, overall self-leadership and commitment to the workplace. Commitment to the workplace is of particular importance in healthcare and the negative consequences of decreased commitment to the workplace among workers in healthcare include reduced care quality, deviation from organisational objectives as well as increased turnover and absenteeism (Bell and Sheridan, 2020; Karami *et al.*, 2017). The findings of this study highlight that high levels of commitment to the workplace exist among the ANPs surveyed, which, as De las Heras-Rosas *et al.*, (2021) suggests high levels of identification with the organisation where they work. Coupled with the finding that the majority of ANPs in this study did not intend to leave their current employment, the high levels of commitment to the workplace lends credence to the findings of Stewart *et al.*, (2020) who found lower commitment to the workplace was associated with higher likelihood of intention to leave. A positive correlation was found between natural reward strategies and overall self-leadership and commitment to the workplace and this is supported by previous research (Inam *et al.*, 2021; Knotts and Houghton, 2021). This study found that there was a confounding effect when the variables of years practicing, years in current position and age were introduced suggesting the relationship between self-leadership and commitment to the workplace is non-linear. One possible explanation for this result is that the ANPs in this study were exhibiting continuance commitment, which is a dimension of commitment which arises when employees believe they have to stay in a position as they lack opportunities to move or progress their careers in other areas (Meyer and Allen, 1997). As discussed previously, until recently, many ANPs' jobs were aligned with a specific post within the Irish health service which limits the options for advancement (Corbally and Lees-Deutsch, 2019), and this restricts their influence at an organisational level which in turn may have led to ANPs increasing their focus on clinical practice and expertise. It is possible to argue, therefore, that the commitment to the workplace reported by ANPs in this study may be continuance commitment due to organisational impediments to movement within the health service. No studies were found which specifically reported on the relationship between the self-leadership dimension of natural reward strategies and commitment to the workplace. While this study provides valuable insights into ANPs' commitment to the workplace, a number of authors (Ben Sedrine *et al.*, 2021; Lau *et al.*, 2015; Onyishi *et al.*, 2019) have identified that when ANPs are assisted to work to capability and their basic psychological needs are met there is a reciprocal increase in commitment to the workplace. As discussed, half of ANPs in this study were practicing for three years or less and it is these early career ANPs that the evidence suggests have lower levels of commitment to

the workplace than mid and late career nurses (Al-Haroon and Al-Qahtani, 2020; Bratt and Felzer, 2012).

Influence at work, which is the degree to which employees can influence aspects of their work (Burr *et al.*, 2019), has previously been associated with a range of positive outcomes such as greater positive goal determination and productivity level (Badri and Panatik, 2020; Li *et al.*, 2018, Adib Ibrahim *et al.*, 2019). That workers are able to self-influence by engaging in self-regulation is core to the construct of self-leadership (Inam *et al.*, 2021). ANPs have been identified as informal leaders, that is they don't hold a formal managerial position. Therefore, ANPs rely on autonomy in exerting their nursing expertise to deliver the best in patient care (Lockwood *et al.*, 2021; Poghosyan and Liu, 2016; Thompson and McNamara, 2021). The finding in this study that ANPs self-reported influence at work is above the benchmarks established by Berthelsen *et al.*, (2020) and suggests that ANPs are utilising their autonomy to manage care episodes and making decisions without external direction (Peacock and Hernandez, 2020; Thompson and McNamara, 2021). However, ANPs occupy a tenuous position which has developed across existing professional boundaries of nursing and medicine and results in ANPs practising in a third space which may affect ANP integration into the interdisciplinary team (Chulach and Gagnon, 2016; Woods and Murfet, 2015) and the development of other relationships within the healthcare system (Thompson and McNamara, 2021). From the finding that no significant relationship was found between self-leadership and influence at work, it is possible to argue that while ANPs work autonomously, self-leadership strategies in and of themselves are insufficient to increase influence at work. If ANPs are viewed as 'outsiders' in their clinical environments it may be more difficult to communicate with members of the interdisciplinary team and exert influence due to the lack of a shared purpose, responsibility and sense of duty which comes with being an 'insider' within a team (Gong *et al.*, 2021). Moreover, 'insiders' use their voice as a means to determine and shape their work environment and enhance self-leadership (Gong *et al.*, 2021). The findings of this study suggest that ANPs need for relatedness as described in self-determination theory (Ryan and Deci, 2000) may not be satisfied beyond the clinical workplace, which may limit their influence at a local and national agenda level and causes plateauing in specialised areas of practice (O'Connor *et al.*, 2018). Moreover, the practice of self-leadership is an intrinsic process, while influence at work requires ANPs to move beyond self-influence and establish and negotiate influence to practice to the maximum extent of their practice in professional collaboration within the interdisciplinary team. Utilising the fullest extent of their influence

may increase patients ability to access care by removing unnecessary impediments that limit the autonomy of ANPs and therefore increase the efficacy of healthcare systems as patients would have faster access to ANPs who could provide more comprehensive models of care. Without such influence ANPs are vulnerable to decision-makers who perhaps have limited understanding of advanced practice roles or the potential they offer. This study has demonstrated that while ANPs have the ability to, and do, exercise leadership, at least over themselves no relationship has been established between self-leadership and influence at work which may suggest an untapped potential of utilising ANPs' self-leadership in clinical care (Cranmer *et al.*, 2019) and suggests that formal positioning rather than expertise determines influence in the workplace. As discussed in Chapter one, ANPs spend the majority of their time involved in direct clinical care. It can therefore be argued that ANPs require organisational support to operationalise their leadership role. However, the hierarchical managerial structure prevalent in healthcare is designed to advance the interests of the organisation rather than to nurture self-leadership of clinicians.

A high level of job satisfaction among ANPs was found in this study; this was in contrast to other studies that suggested dissatisfaction among ANPs (Fournier *et al.*, 2019), reduced interest among nurses in pursuing ANP roles (Woo *et al.*, 2020) and evidence such as that from Wood *et al.*, (2021) which showed that half of ANPs were considering a change in job due to the increasing demands of the clinical environment. In a study with a similar sample, O'Keeffe *et al.*, (2015), found that 97.9% of ANPs, were either satisfied or very satisfied with their jobs; however, in contrast this study found that a lower proportion of ANPs were satisfied with their jobs. These findings are in line with those of Corbally and Lees-Deutsch, (2019) and Wood *et al.*, (2021) who found that there may be an emerging dissatisfaction among ANPs, especially with regard to role identity and isolation at work. This suggests that there is a need to explore career progression for this group to ensure their innovative practice and clinical expertise are used for optimal utilisation within the healthcare system. This study did not find a statistically significant relationship between ANP job satisfaction and self-leadership or its major dimensions. This is in contrast to a number of studies across a diverse range of roles which found that self-leadership dimensions are positively and significantly linked with employee job satisfaction, and that job satisfaction can be enhanced through self-leadership training (Marques-Quinteiro *et al.*, 2019, Mayfield *et al.*, (2021), Javadi *et al.*, (2013), Sesen *et al.*, (2017). The findings of this study therefore are challenging to explain as if the adoption of self-leadership strategies is not beneficial in increasing job satisfaction, then it is difficult to

appreciate the motivation of ANPs in adopting self-leadership strategies. One explanation may be the use of a single item measure rather than a multi-item scale for job satisfaction however as previously discussed a single-item measure of job satisfaction was used in this research as it allowed individual ANPs to rate their job satisfaction based on job-related factors which were important to the individual (Scanlan and Still, 2019; Wanous *et al.*, 1997).

This study contributes to knowledge about self-leadership and intention to leave. ANPs who reported an intention to leave also reported higher use of constructive thought pattern strategies and overall self-leadership levels. ANPs who employ constructive thought pattern strategies aim to create more positive and optimistic thoughts which enhance attitudinal and performance outcomes (Panagopoulos and Ogilvie, 2015). In the context of this study, it therefore seems logical that ANPs who exhibit greater constructive thought pattern strategies would also plan to advance their careers through the pursuit of new positions or roles. Indeed, as highlighted by Goldsby *et al.*, (2021), those who employ self-leadership strategies are proposed to take more ownership of their working lives and so will guide themselves to pursue roles and careers that are more opportune. An alternative explanation is that organisations are unable to accommodate self-leaders, who perhaps have to look outside their current roles to fulfil their leadership potential, however this cannot be explored further in the context of this study.

5.5. Strengths and Limitations

There are a number of strengths and limitations of the research which should be considered when interpreting the study results. A strength of this study is the high response rate. While there is no consensus on minimum acceptable response rates in survey methodology (Frey, 2018), that 60% (153/245) of ANPs who received the survey participated in the research is a strength of this study. The high response rate is likely due to multiple factors including the dissemination of the research instrument by two reputable organisations (The HSE and IAANMP) which have up-to-date sampling frames and the use of the Tailored Design Method (TDM) internet survey implementation method proposed by Dillman *et al.*, (2014).

A cross-sectional design in this study was useful in estimating the prevalence of the study variables in a population (Sedgwick, 2014). However, the adoption of a cross-sectional design

prevented the researcher from observing trends in the variables over time (Sedgwick, 2014). For instance, self-leadership has been found to vary over time (Ugurluoglu *et al.*, 2015), and it is expected that work engagement may also increase and decrease over time. Indeed, it has been demonstrated that when respondents are asked about their perceptions of phenomena they often rely on their current mood at the time of questioning as a proxy for how they feel about the phenomena overall (Lucas, 2018), which may affect the researcher's ability to generalise this study's findings. Therefore this study should be used to inform hypothesis generation for future cohort studies examining self-leadership among ANPs (Hackshaw, 2015) to draw more accurate research conclusions. While the results of this study infer that self-leadership was associated with work engagement, commitment to the workplace and intention to leave, cross-sectional, self-reported data cannot adequately address causality (Sedgwick, 2014; Wang and Cheng, 2020).

A limitation of the current study is that it did not adopt a census approach by sampling the entire population of ANPs on the Nursing and Midwifery Board of Ireland's advanced practice register. However, this approach was deemed infeasible for this study due to issues of approval times, delays in potential access and the reported inefficiency of this approach (Lohr, 2022). The sampling frame for this study was all ANPs who were included in the Health Service Executive (HSE) and the Irish Association of Advanced Nurse and Midwife Practitioners (IAANMP) databases of registered ANPs at the time of the study. It was possible that a small number of potential respondents were on the email lists of both organisations and may have been contacted twice. This issue was addressed in the introductory email with respondents being asked to respond only once however some may have completed it twice. Due to the study data being collected without any identifying factors to ensure anonymity the researcher had no way to confirm or dispute this. Additionally the anonymous nature of the data prohibited exploration of broader themes and relationships between the variables studied. However, this study did use established and recognised instruments to collect the study data.

Non-probability sampling method was chosen following the consideration of multiple factors including the research question, the study methodology, knowledge about and the size of the population of ANPs in Ireland (Elfil and Negida, 2017; Shorten and Moorley, 2014). To minimise the disadvantages of non-probability sampling such as difficulty generalising to the whole population and inability to estimate sampling error, this study used the work email addresses of ANPs in Ireland to obtain a random sample of ANPs. Using individual email

addresses also mitigated against one of the commonly cited concerns of online surveys which is that it cannot be guaranteed that those providing responses are the intended sample (Helms *et al.*, 2017).

In line with current trends, this study used an online survey for data collection because of their fast response times and economy (Lehdonvirta *et al.*, 2020). However, non-response bias remains a consideration with this approach as the decision to participate may be linked to respondents' attributes (e.g. their belief in the construct of Self-leadership) (Lehdonvirta *et al.*, 2020). It is recognised that ANPs who use less self-leadership strategies may be less likely to respond than those who adopt self-leadership strategies (Harvey *et al.*, 2018), which may have led to skewed distribution in this study's findings (Gustavson *et al.*, 2019).

Collecting information through a self-report has limitations, most prominently that respondents may be biased when they report on their own experiences and may be prone to social desirability bias (Devaux and Sassi, 2016; Smith *et al.*, 2018). However, all scales used in this study demonstrated strong validity meaning that the instruments measure the concept/ construct intended. Also, given the subjective nature of leadership in general and the internal social process on which self-leadership in particular depends, seeking individual ANPs views on self-leadership was appropriate in this study.

Relatively little research has been done on self-leadership in ANPs, and the concept of ANP is not a homogeneous term, both of which makes it difficult to relate the findings to nurses who are working in advanced roles in a global context. In addition this study only focused on self-leadership, constituting only a small part of the current body of knowledge on the leadership role of ANPs.

The present findings were discussed in light of previous studies, however it must be acknowledged that some of the prior work uses modified versions of the revised self-leadership questionnaire, which makes direct comparisons challenging. For example, while a number of researchers (Avcı and Kaya, 2021; Cristofaro and Giardino, 2020; Megheirkouni, 2018) measured self-leadership with the full 35 item RSLQ developed by Houghton and Neck 2002, a number have used selected subscales from the instrument (Dorssen-Boog *et al.*, 2021; Müller and Niessen, 2018; Steinbauer *et al.*, 2018), and others have used adapted versions which have been translated into languages other than English and in some cases use a reduced number of self-leadership subscales (Boonyarit, 2021; Bum, 2018; Marques-Quinteiro *et al.*, 2019; Müller

and Niessen, 2018; Sesen *et al.*, 2017). Nientied and Toska, (2021) used the original 35-item instrument, but used a seven point Likert scale to measure each concept, rather than the five point Likert scale proposed by Houghton and Neck, (2002).

Additionally, the self-punishment subscale was included in the analyses of the present study. This subscale was reverse scored in the present study following advice from the original authors (J. Houghton personal communication March 23, 2021, Appendix 14). However, this subscale has limitations as acknowledged by the Houghton (2021) and has been excluded by several authors in previous studies (Mahembe *et al.*, 2013; Türköz *et al.*, 2013, Houghton *et al.*, 2014) leading to different total scores for behaviour focused strategies dimension of the RSLQ. When viewed through the lens of self-determination theory it may be argued that the self-punishment subscale may be an example of controlled motivation which Ryan and Deci, (2000) explain refers to the behaviours or actions of employees to get some reward, or to avoid some punishment and have a negative impact on outcomes such as performance, well-being or engagement.

5.6. Recommendations

This study has demonstrated that the needs proposed by self-determination theory (autonomy, relatedness, and competence) have significant implications for role optimalisation of ANPs and the direction of future research. Arising from this thesis, the following actionable recommendations are made to assist clinicians, managers, educationalists and researchers with regard to future development of self-leadership in ANPs.

5.6.1. Educational Recommendations

This study adds to the scant body of knowledge around ANPs and self-leadership and provides insight which may assist in planning curricular strategies to teach and sustain use of self-leadership strategies over an ANP's career span. Noted in the literature were studies that highlighted training as a method of increasing self-leadership skills, behaviours and cognitions (Arista and Parahyanti, 2017; Goldsby *et al.*, 2021; Stewart *et al.*, 2011). ANP education, at present, does little for developing self-leadership skills for working in innovative clinical

environments, and instead focus on the clinical workload skills required (Casey and O' Connor, 2021).

For educators of ANPs, building self-leadership capacity by developing and incorporating specific training in this area as a foundational development strategy in advanced practice curricula should be a focus. For example, an emphasis on behaviour focused strategies may increase the awareness of ANPs who are new in post, of when and why one engages in specific behaviours. This type of self-awareness is a necessary first step toward changing or eliminating ineffective and unproductive behaviours, and may assist new ANPs in avoiding the reductionist behaviours which has led to a prioritisation of the clinical aspect of advanced practice roles and instead increase their individual performance level at a more strategic level. Since time in current position was found to demonstrate a statistically significant relationship with self-leadership, this should be addressed by faculty as a point of interest. A possible strategy would be the development of educational opportunities which would allow ANPs to engage in lifelong learning including self-leadership training and career development to ensure ANPs and others within healthcare apply the depth of their expertise clinically while developing as scholar-practitioners (O'Connor *et al.*, 2018). In addition, ANP educators should inform students that as they continue to practice self-leadership behaviours, they will become more competent, and effect change within the wider interdisciplinary team.

Leading on from theoretical instruction on self-leadership, exposing ANP candidates to environments that provide opportunities to exercise their self-leadership skills is a recommendation from this research. Facilitating ANP candidates to incorporate self-leadership skills into the multiple facets of their roles will enhance their professional selves, but also have wider patient and organisational benefits. This will require closer relationships between educational organisations and healthcare organisations to support candidate ANPs to exercise their self-leadership role, especially during the transitionary period from candidate to registered ANP, which is a period associated with increased stress (Kerr and Macaskill 2020, Thompson and McNamara, 2021)

5.6.2. Organisational Recommendations

From an applied perspective, this study highlights the importance of self-leadership for ANPs. The results suggest that it would be beneficial for managers to facilitate and encourage ANP

self-leadership development to reap the organisational benefits of their employees' self-leadership skills, behaviours and cognitions. Self-leadership has been successfully linked to positive organisational outcomes (Marques-Quinteiro *et al.*, 2019, Alnakhli *et al.*, 2020). In this study work engagement uniquely explained 14.4% of the variance in behaviour focused strategies, 11.4% of the variance in constructive thought pattern strategies, 12.3% of the variance in natural reward strategies and 18.4% of the variance in overall self-leadership. Thus, organisations should move away from deep and defined hierarchies that are viewed as being less amenable to change (Barth, 2011) and toward participative leadership styles which increase employee work engagement and morale (Halaychik, 2016); this would facilitate clinicians such as ANPs to make their leadership role visible at a clinical and organisational level. This may be achieved by an organisational prioritization on enabling ANPs to feel competent and autonomous, as well as promoting role integration to satisfy the need of relatedness. This recommendation creates a challenge for healthcare organisations who will be required to strike a balance between involving ANPs in strategic decision process and maintaining a level of authority, which is necessary for making time sensitive decisions *(*Halaychik, 2016). Organisational transformation which facilitates ANPs to flourish as self-leaders capable of leading, delivering and contributing to clinical research while continuing to provide clinical expertise and develop clinical practice (Cowley *et al.*, 2020) would enhance the ANP role and narrow the clinical-academic divide which Darbyshire *et al.*, (2020) argues exists in nursing. The current cultural context within healthcare organisations at an operational level are challenged to integrate nurses and allied health professionals who wish to pursue intellectual development in tandem with the provision of clinical expertise (Cowley *et al.*, 2020). There is therefore a need to critique ANP practice at an operational level to consider how the role can be evolved and capacity can be increased to facilitate ANPs to contribute to patient care through involvement in research and leadership activities.

Collaborative bodies of ANPs, funders and organisations should develop and deliver training programmes aimed at equipping and allowing ANPs to apply self-leadership strategies at work so that their talent, skills, and clinical expertise contributes to organisational decision making and improve work engagement. However, training programmes in isolation for individual ANPs are unlikely to result in organisational improvements as there are a plethora of formal leadership training opportunities that result in the award of a degree. It is suggested therefore there is a mismatch between the leadership training available and the career development

opportunities available to ANPs arising from these awards. A recommendation from this study is that an integrated process of self-leader development moves beyond skills training and provides for mechanisms that enmesh the role of ANP self-leader development as well as skills training, within the context of the wider healthcare organisation. In essence this requires the organisation to recognise and embrace the unique 'third space' position of ANPs who have demonstrated their ability globally to contribute to population level healthcare and are adept at practicing within complex environments. Therefore, an important recommendation of this study is that facilitative strategies need to be developed that allow ANPs to advance their careers beyond their current role. Evidence of ANPs readiness to advanced their careers beyond their current role was found by Brady and Drennan, (2020) in an evaluation examining the impact of ANPs on service challenges and reported that approximately half of ANPs reported an intention to expand their practice. One such strategy may be a career framework for ANPs which would make visible their career opportunities, provide the health service with senior clinical leaders who can fulfil a scholar-practitioner role, and navigate them to doctoral level education which strengthens clinical leadership and influences healthcare systems policy and management (Dobrowolska *et al.*, 2021; Rugs *et al.*, 2020). This recommendation is consistent with a recommendation from Corbally and Lees-Deutsch (2018) who highlighted the need for career progression for ANPs to ensure their creative energy and knowledge are used for optimal utilisation within the healthcare system. A coalescing of the clinical role and leadership role through the establishment of a *clinical academic* career *pathway* which would facilitate ANPs to remain involved in patient care while developing research literate clinical leaders capable of conducting and applying evidence based care to improve health outcomes (Newington *et al.*, 2021).

5.6.3. Research Recommendations

Recommendations for further research are provided to increase the body of knowledge related to self-leadership utilisation by ANPs. The findings from this study highlight and underscore the relationship between self-leadership and the psychosocial work environment. The first recommendation for further research would be to conduct a qualitative/ mixed-methods study to help explain, explore and understand in greater depth the findings from this cross-sectional study. Secondly, with work engagement having such a strong positive relationship to self-leadership, further longitudinal research is required to see how this important relationship can

be operationalised to enhance work engagement. Strategies to enhance work engagement are of particular interest as there is evidence of poor social environments being experienced by many workers in health-related services (Eurofound 2020). Healthcare organisations require motivated engaged workforces. Therefore the third recommendation is that further research (likely mixed-methods) be done to determine which teaching methods are best in promoting self-leadership in clinical practice. The results could provide collaborative bodies of ANPs, funders and organisations, with insights which may influence programme structure and curricula in a manner which promotes self-leadership.

Research concerning self-leadership has been dominated by a focus on understanding the individual and organisational outcomes from self-leadership skills, behaviours and cognitions. There seems to be scant attention paid to patients who are the population most directly affected by the use of self-leadership strategies by healthcare workers. No studies were found in self-leadership research which reports on improvements or otherwise to patient sensitive outcomes from healthcare worker self-leadership. This suggests that patients have been marginalised from the discussion on self-leadership and therefore a recommendation from this study is that future research seeks to understand the effect of ANP self-leadership on patient sensitive outcomes, as it has been established that leadership style affects the culture of healthcare organisations and quality of care within them (Daly et al 2014, West et al 2015).

No statistically significant relationship was found between self-leadership and job satisfaction in this study. Job satisfaction has been one of the leading areas for self-leadership research in the past decade and it has been posited that job satisfaction is an accepted outcomes of self-leadership (Goldsby et al 2021). Therefore, further research is required to understand why the findings of this study of ANPs are inconsistent with previous studies (Mayfield *et al.*, 2021, Javadi *et al.*, 2013 Sesen *et al.*, 2017).

Leadership is often positioned as the most important aspect in a complex healthcare environment (Daly 2014, Ayeleke et al 2017). Apart from leaders, there are also situational factors, structures, cultures and patients. All of these multi-level elements exert an influence on the psychosocial work environment (Bakker and Demerouti 2018). We are therefore all responsible. If ANPs self-leadership contribution is to be optimised there is a requirement to change the structures and culture to allow ANPs to demonstrate their leadership. A

recommendation therefore would be that there should be further research to understand the interaction between self-leadership and organisational culture.

5.7. Conclusion

Self-leadership is a requirement for the accomplishment of personal and professional goals and is necessary for the successful leadership of others. Self-leadership is especially important for ANPs whose individual decision making and actions affect care outcomes. The self-leadership approach is challenging to hierarchical management styles which, it has been suggested, are inadequate for managing employees in organisations which demand flexibility and in which employees, such as ANPs, engage in transboundary working. It has been suggested that self-leadership, with its focus on intrinsically motivated, proactive employees, respond well to such challenging environments. This study has demonstrated that ANPs report high levels of self-leadership and has demonstrated positive relationships with work engagement, commitment to the workplace and intention to leave. It may be naïve however, to think that healthcare organisations are culturally ready to allow ANPs to flourish as self-leaders, which would require a shared or participative leadership model. We need to explain to ANPs and organisational leaders the benefits of a collectivistic leadership model in which autonomous self-leading clinicians such as ANPs can maximise their potential within a system which has traditionally relied on a hierarchical structure. The hierarchical model is difficult to move away from in nursing and healthcare management as there are multiple levels in health systems. Additionally, there is a cultural aspect to leadership. Traditionally nurses have had a subservient role in healthcare teams. Perhaps the healthcare inter-disciplinary group will not accept shared leadership as we are culturally conditioned to the hierarchical model however the success of the advanced practice role and its future development depends on a move away from this model.

The positive impact of ANPs on a range of patient, staff and organisational outcomes has been established. Organisations, policy makers and ANPs as a group need to evaluate the alternate roles of ANPs and develop models that optimize the contribution of this group to leadership, scholarship and clinical care. At a national and global level ANPs requiring the support of organisational leaders and the establishment of collaborative relationships with stakeholders to

achieve a cultural transition which facilitates ANP self-leadership for the betterment of global health through healthcare delivery and prevention of ill-health.

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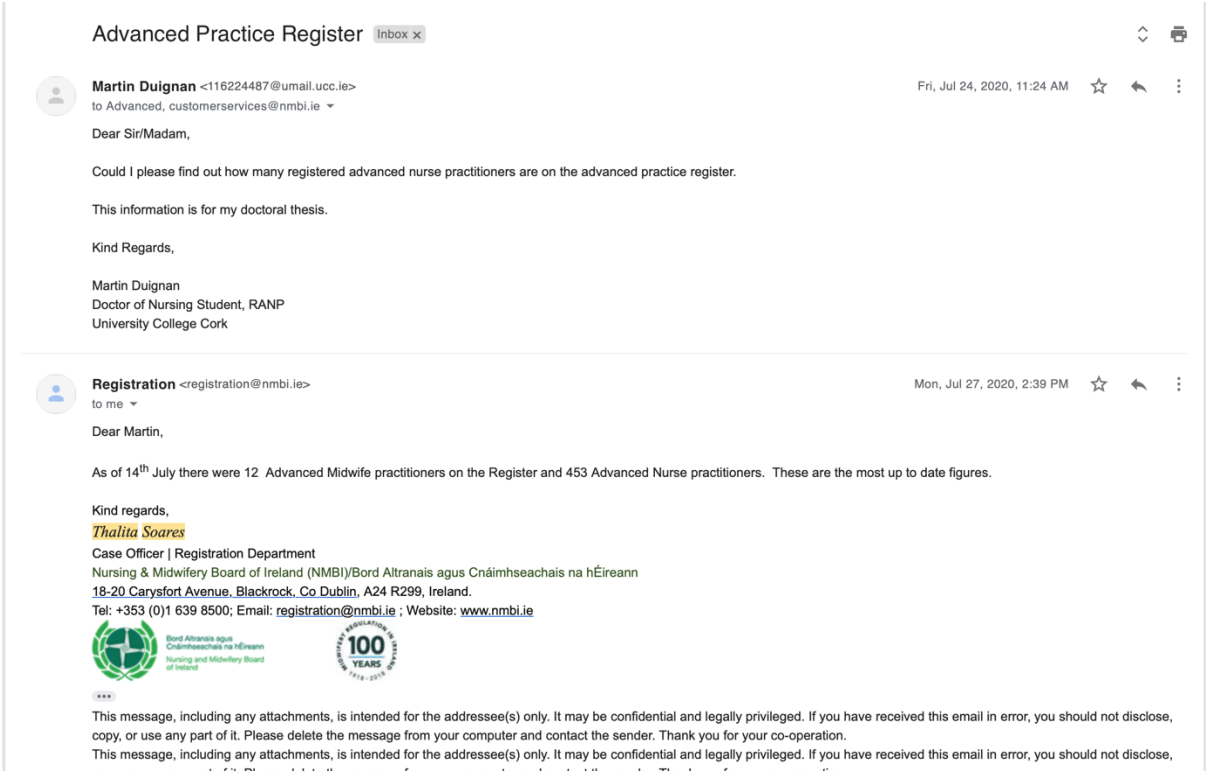
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Appendix 1: Email from NMBI regarding No. of ANPs on Advanced Practice Register



Advanced Practice Register Inbox ×

Martin Duignan <116224487@umail.ucc.ie> Fri, Jul 24, 2020, 11:24 AM
to Advanced, customerservices@nmbi.ie

Dear Sir/Madam,

Could I please find out how many registered advanced nurse practitioners are on the advanced practice register.

This information is for my doctoral thesis.

Kind Regards,

Martin Duignan
Doctor of Nursing Student, RANP
University College Cork

Registration <registration@nmbi.ie> Mon, Jul 27, 2020, 2:39 PM
to me

Dear Martin,

As of 14th July there were 12 Advanced Midwife practitioners on the Register and 453 Advanced Nurse practitioners. These are the most up to date figures.

Kind regards,
Thalita Soares
Case Officer | Registration Department
Nursing & Midwifery Board of Ireland (NMBI)/Bord Altranais agus Cnáimhseachais na hÉireann
18-20 Carysfort Avenue, Blackrock, Co Dublin, A24 R299, Ireland.
Tel: +353 (0)1 639 8500; Email: registration@nmbi.ie ; Website: www.nmbi.ie

Bord Altranais agus Cnáimhseachais na hÉireann
Nursing and Midwifery Board of Ireland

100 YEARS

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Appendix 2 : Published Paper (Chapter 2)

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REVIEW ARTICLE

WILEY

Impact of clinical leadership in advanced practice roles on outcomes in health care: A scoping review

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Jonathan Drennan MEd, PhD, RGN, Chair of Nursing and Health Services Research[1] |
Vera J. C. McCarthy MA, PhD, RGN, Lecturer[1]

[1]

[2]

Correspondence

Abstract

Aim:

Background:

Method:

Results:

Conclusion:

Implications for Nursing Management:

1 | INTRODUCTION

The impact of clinical leadership on health care outcomes has gained increasing interest in health systems worldwide (Mianda & Voce, 2018), not least in the area of advanced practice (Lamb et al., 2018). In nursing and in other health professions, advanced practitioners (APs) are increasingly identified as clinical leaders who have progressed into areas of higher level practice improving care quality and outcomes (Evans et al., 2020; Leggat et al., 2015; Milner & Snaith, 2017; Thompson et al., 2019). While there is an established association between leadership traits of managers and a range of patient, staff and organisational outcomes within health services in general (Cummings et al., 2018; West et al., 2015), demonstrating the impact of clinical leadership on outcomes remains challenging. Examples of objective patient-related outcomes associated with leadership are measures such as 30-day mortality, patient safety, hospital-acquired injuries, patient satisfaction, physical restraint use and pain management (Sfantou et al., 2017). It has been identified that there is a relationship between leadership and staff-related outcomes such as job satisfaction, organisational commitment and increased retention and between leadership and organisation-related outcomes such as organisational commitment, incidence of complaints, organisational readiness and performance measurement (Sfantou et al., 2017). However, there is a need to evaluate the extent to which this evidence is specific to the expression of clinical leadership by APs.

Clinical leadership contribution to the provision of safe and efficient care has been highlighted in governmental reports (Francis, 2013; Keogh, 2013; Kirkup, 2015) and in the academic literature (Jonas et al., 2011; Mianda & Voce, 2018). While there is consensus as to the importance of clinical leadership, there is less agreement on a clear definition of the concept. Nevertheless, common characteristics identified include the following: clinical embeddedness, expertise, visibility within care environments, role modelling, facilitation of care, working within and across professional boundaries and a concern with improving care quality (Elliott et al., 2013; Giles et al., 2018; Santiano et al., 2009; Walsh et al., 2015). In a report evaluating AP roles within nursing, the SCAPE report (NCNM, 2010) suggested a number of activities that give expression to clinical leadership (Table 1). A widely cited definition is that of Jonas et al. (2011:1) who define clinical leadership as:

> The concept of clinical healthcare staff undertaking the roles of leadership: setting, inspiring and promoting values and vision, and using their clinical experience and skills to ensure the needs of the patient are the central focus to the organisation's aims and delivery.

The need to foster clinical leadership development has been embedded into health policy in a number of jurisdictions including the United Kingdom (National Health Service, 2019), the Republic of Ireland (Fealy et al., 2015) and Australia (Pizzirani et al., 2019) where the need for training and development in clinical leadership for the health workforce has been emphasized to produce effective improvements in care quality and outcomes. Clinical leadership has also been promoted as a keystone component of advanced practice roles in health care, where it has been identified as a significant enabler of the role (Walsh et al., 2015); however, it remains unclear how clinical leadership is specifically measured in advanced practice roles.

TABLE 1 Activities which give expression to clinical leadership

Active membership of the multidisciplinary team
Active membership of committees with responsibility for policy, practice and guideline development
Initiating and improving patient/client care through service development
Influencing clinical practice through formal and informal education, mentoring and coaching the multidisciplinary team
Influencing clinical practice through positive role modelling of autonomous clinical decision-making and ongoing professional development for the multidisciplinary team.

Therefore, the authors conducted a scoping review to develop an understanding of the impact of clinical leadership in practice, as such reviews are exploratory and systematically sift through available literature on a particular subject (Anderson et al., 2008). This review will synthesize the available evidence on how clinical leadership is enacted by APs in relation to patient, staff and organisational outcomes.

2 | AIM

The aim of this scoping review was to examine the literature exploring the enactment of clinical leadership in advanced practice roles in relation to patient, staff and organisational outcomes. Enactment of clinical leadership in AP practice was defined as those activities which give expression to clinical leadership (Table 1) reported in the SCAPE report (NCNM, 2010).

3 | METHODS

To prevent redundancy and duplication of effort, a protocol search was performed using two registers of systematic reviews: the international prospective register of systematic reviews (PROSPERO) and the *Cochrane Database of Systematic Reviews* (CDSR). No reviews matched 'clinical leadership' in title or abstract. The guidelines from Arksey and O'Malley, (2005) for conducting scoping reviews were used. The search strategy for this literature review was guided by the protocol outlined by Aromataris and Riitano (2014), which provides stepwise guidance on developing a search strategy.

3.1 | Eligibility criteria

Inclusion criteria were as follows: primary studies; conducted in any of the 36 OECD member countries listed as of August 2019 (https://www.oecd.org/about/members-and-partners/); published between 2009 and 2019; and reporting on outcomes from clinical leadership among health care professionals working in advanced clinical practice roles. Only the 36 OECD countries were included as eligible study settings as clinical leadership development is not well established in lower income countries (Mianda & Voce, 2018). The date range was guided by the emergence of values based leadership styles such as clinical leadership in the literature, which has occurred over the past decade in response to moral and ethical deficiencies in organisational leadership (Copeland, 2014). Excluded were studies published in a language other than English, as well as editorials, notes, letters, unpublished theses, discussion papers, reviews and single case reports.

3.2 | Databases

The following databases were searched: SCOPUS, PubMed, Psychinfo and Cinahl plus (via EBSCO Databases) and Web of Science. A search strategy was developed which combined key terms using a series of free text terms and MeSH terms for Advanced Practice AND clinical leadership. Boolean operators and appropriate 'wild cards' were used to account for plurals, and variations in databases and spelling. The PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation guided the review (Appendix S1—PRISMA-ScR Checklist).

3.3 | Review process and extraction

An initial identification and screening of titles and abstracts was independently performed by two authors (MD and VMC) against predefined inclusion and exclusion criteria. These two authors subsequently reviewed the full texts against the same criteria. Conflicts between reviewers were resolved by consensus and the input of the third author (JD). No assessment of study quality as part of the review process was included consistent with the guidance from Peters et al., (2015). Data synthesis was undertaken in three stages: (a) evidence extraction and mapping, (b) identification of evidence gaps and (c) a narrative synthesis of selected research areas. A single author (MD) extracted and mapped the data from included studies according to a specifically designed data extraction table (Table 2—Data Extraction), while a second author (VMC) checked the extracted data. Double extraction is generally not required in scoping reviews (Powell et al., 2019).

The data extracted included: author, year, country, data collection methods, study population and relevance to the aim. Additionally, data were extracted on the following factors: study design, geographic region and setting. The identified papers were explored using tabulation of findings and narrative synthesis to identify the key concepts (Table 2—Data Extraction). The narrative descriptive synthesis was conducted for primary qualitative, quantitative and mixed-methods studies meeting the inclusion criteria.

4 | RESULTS

4.1 | Description of studies

A total of 765 articles were retrieved and initially screened, with an additional six articles retrieved from hand searching. After removing duplicates and studies judged to be non-relevant, 57 papers were identified for full-text review and seven met the review eligibility criteria. The primary reason articles were excluded was that they did not address the review question (Figure 1 PRISMA 2009 Flow Diagram for APs clinical leadership scoping review). The reviewed studies were conducted in three countries: Ireland (citations), Australia (citations) and Belgium (citation) (Table 3). No studies from the remaining 33 OECD countries were found in the defined time frame.

Included studies were conducted in both acute and community settings (Begley et al., 2013; Coyne et al., 2016; Elliott et al., 2013; Giles et al., 2018) or involved both university and non-university hospitals (Van Hecke et al., 2019). Most studies were either qualitative (Coyne et al., 2016; Elliott et al., 2013; Santiano et al., 2009; Walsh et al., 2015) and/or of mixed-methods design (Begley et al., 2013; Giles et al., 2018) with one using a quantitative approach (Van Hecke et al., 2019). Studies' sample sizes ranged from two (Santiano et al., 2009) to 151 (Coyne et al., 2016).

4.2 | Advanced practitioners

Despite all advanced health care practitioners (nurses and allied health professions) being included in the search criteria, only studies involving the clinical leadership role of nurses working in advanced practice roles were identified. The majority of the studies sampled a range of other health professionals in addition to APs in identifying the clinical leadership role of APs (Begley et al., 2013; Coyne et al., 2016; Walsh et al., 2015). Several studies aimed to investigate and understand the various roles and clinical services provided by APs (Begley et al., 2013; Coyne et al., 2016; Giles et al., 2018; Santiano et al., 2009), with other studies specifically aiming to identify (Elliott et al., 2013), investigate (Van Hecke et al., 2019) and provide understanding (Giles et al., 2018) of the leadership capabilities of such roles.

It was evident from the included studies that a range of titles were used to describe nurses working in advanced practice roles. Clinical nurse consultant was the title used in Australian studies (Giles et al., 2018; Santiano et al., 2009; Walsh et al., 2015), while in the Belgian study the title advanced practice nurse was preferred (Van Hecke et al., 2019). Among papers published from the SCAPE

TABLE 2 Data extraction table APs clinical leadership scoping review

Author, year & Country of study	Research question or study aim	Research design	Data collection including research instruments	Study population	How Clinical Leadership was expressed	Comments
Begley et al. (2013) Ireland	'To compare the roles, responsibilities, and perceived outcomes of Clinical Nurse Specialists, Clinical Midwife Specialists, and Advanced Nurse Practitioners in Ireland' (pg 1,324)	Mixed-method case study	Non-participant observation (92 hr) of 23 Clinical Specialists and Advanced Practitioners, documentary evidence (audit, diaries, work programmes), interviews, questionnaire (developed for this study)	*N* = 21 clinicians *N* = 13 Directors of Nursing or Midwifery *N* = 154 service users Acute and Community	*Staff*: Acted as a resource within the MDT (Qual) *Organisation*: sat on committees, participant in policy development and took part in service planning (Qual)	
Coyne et al. (2016) Ireland	'1. To explore the provision of care received in sites with CS and AP and without from the perspective of service users, clinicians and decision-makers. 2. To explore clinicians' perceptions of care given to service users in sites with and without accredited clinical specialist and advanced practitioner postholders'. (pg 3)	Multiple case study	Interviews	*N* = 23 Directors of Nursing and Midwifery *N* = 41 health care professionals *N* = 41 service users/family members/carers *N* = 23 Postholders (CNS/ANP) *N* = 23 Non = postholders (nurses, midwives or doctors) Acute, community and residential sites	*Patient*: Facilitates access to services *Staff*: Mentors and acts as a resource to other staff. Works across boundaries with MDT *Organisation*: Involvement in policy and guideline development. Provide leadership in clinical practice. Perceived to reduce readmission rates. Documentary evidence of a reduction in waiting times in ED and colposcopy	Participants promoted interprofessional team working and smoothed transition of patients/clients through the health care system
Elliott et al. (2013) Ireland	'To report a case study that identifies how leadership is enacted by advanced practitioners in nursing and midwifery and differentiates between clinical and professional leadership in advanced practice' (pg. 1,039)	Multiple case study methodology	Non-participant observation, interviews, and the collection of on-site written records	23 CS/APs across 28 health service provider sites	*Patient*: Introduces and develops patient/client care services *Staff*: Mentors and educates the MDT ANPs guides and co-ordinates The MDT. Acts as a positive role model for autonomous clinical decision-making and ongoing professional development *Organisational*: initiates practice change, takes responsibility for policy and guideline development and implementation, involved in service planning, Changes clinical practice through formal education of MDT	Seven key activities that indicated clinical leadership were identified

(Continues)

TABLE 2 (Continued)

Author, year & Country of study	Research question or study aim	Research design	Data collection including research instruments	Study population	How Clinical Leadership was expressed	Comments
Giles et al. (2018) Australia	'To provide understanding of the nature of CL in the nurse consultant role by describing how it is enacted by NCs, how key stakeholders perceive its impact within the role and what elements influence NCs effectiveness as clinical leaders'. (pg. 1983)	Qualitative findings from a larger sequential mixed-method study	Sequential mixed-method design. Used online survey, online discussion forum and stakeholder focus groups	2 nurse consultants ($n = 26$), managers (n–20), other stakeholders ($n = 16$) Acute, primary and community care settings	*Patient*: Care coordination *Staff*: Act as a resource. CNCs are the 'go to person' *Organisational*: Trans-boundary working. Enhance service quality, act as change agents	As clinical leaders, nurse consultants were found to facilitate care, work across boundaries, provide education, mentor colleagues, coordinate care and change practice
Santiano et al. (2009) Australia	'To explore how CNCs who provide hospital wide support after hours (AHCSs) construct their role'. (pg. 87)	Ethnographic study	Videoing of CNC work and Semi-structured interviews	Two clinical nurse consultant providing after hours clinical support	Patient: moderates the influence of the social determinants of health on patients and populations Staff: promote MDT clinical partnerships Organisation: Influences health care policy and practice	Found that CNC acted as clinical leaders by influencing and progressing clinical care, policy and collaboration through all levels of the health service
Van Hecke et al. (2019) Belgium	'To explore the practice profile and competencies of advanced practice nurses (APNs) and midwives (AMPs), and factors associated with task non-execution' (pg. 1.261)	Quantitative cross-sectional study	Questionnaire	63 questionnaires met the data analysis criteria All APN and AMPs working in a region of Belgium were sampled	*Patient* Initiate, implement and evaluate QI initiatives *Staff* Mentor students. Translate theory into clinical practice *Organisation* Guideline and care protocol development Policy development. Involved in change management and innovation	
Walsh et al. (2015) Australia	'The aim of this research project was to investigate the role of the Clinical nurse consultant (CNC) from the multiple perspectives of CNCs and other stakeholders who work with CNC' (pg. 172)	Inductive, participatory, and qualitatively descriptive	Cooperative research, situational analysis, one-to-one interviews, focus groups, reflective techniques	103 stakeholders Describes the CNCs as being from one clinical stream in a local health district	*Patient*: Stakeholders opined that specialist knowledge allowed CNC to advocate for patients thereby improving outcomes *Staff*: CNCs mentor and educate staff *Organisation*: CNC viewed as spinners, interweaving services and connecting parts of care and care delivery	Found that clinical leadership was core to the CNC role. Manifested as CNCs' way of working with health professionals, managing professional agency, and weaving a dance between providing support and enabling others

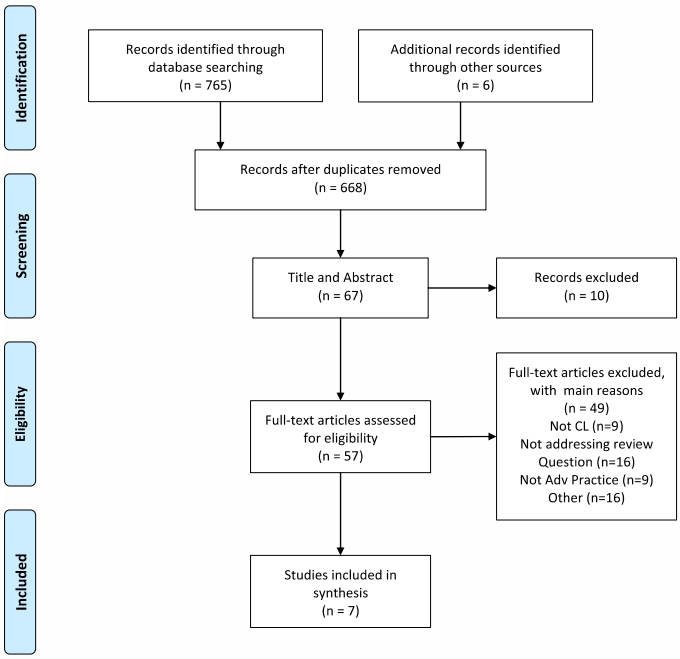


FIGURE 1 PRISMA 2009 flow diagram for APs clinical leadership scoping review. Adapted from Moher et al. (2009) [Colour figure can be viewed at wileyonlinelibrary.com]

report in Ireland, the titles clinical nurse specialist, clinical midwife specialist and advanced nurse practitioner were used (Begley et al., 2013; Elliott et al., 2013). It has been acknowledged that the confusion created by such variation in titles and lack of role clarity has exacerbated the difficulty in measuring the impact of clinical leadership and its contribution to patient, staff and organisational outcomes (Giles et al., 2018).

4.3 | Measurement of clinical leadership

Two studies used quantitative instruments as part of their research measuring role integration, the potential impact of the AP role in health services and selected outcomes. As part of Begley et al. (2013) study, a questionnaire was used to measure service users' experiences of various aspects of their care. Van Hecke et al. (2019) explored clinical/professional leadership as one aspect of a wider suite of advanced practitioner tasks and competencies. However, none of the instruments in the papers reviewed solely measured clinical leadership from the perspective of the APs or other key stakeholders.

A number of studies (both qualitative and quantitative) reported on the opinions and/or perceptions of research participants (these included APs and other health care professionals) (Giles et al., 2018; Van Hecke et al., 2019; Walsh et al., 2015), rather than measuring the impact of clinical leadership on outcomes. Two studies reviewed highlighted the importance of clinical leadership to advanced practice roles and the positive influence of clinical leadership on patient, staff and organisational outcomes (Giles et al., 2018; Walsh et al., 2015). However, despite studies highlighting clinical leadership as a central tenet of the role, no objective evidence was presented to identify the extent to which this occurred in practice (Begley et al., 2013; Elliott et al., 2013; Santiano et al., 2009) with it being suggested that a lag in service and organisational responsiveness inhibited APs' ability to enact their clinical leadership role (Giles et al., 2018).

4.4 | Patient-related outcomes

A number of studies highlighted that APs improved outcomes for patients by collaborating with and co-ordinating the multidisciplinary team and facilitating continuity of care (Begley et al., 2013; Coyne et al., 2016; Elliott et al., 2013; Higgins et al., 2014; Santiano et al., 2009; Walsh et al., 2015). Some studies showed evidence that APs' clinical leadership role improved access to care for patients, patient satisfaction and waiting times, and developed services in response to patient need (Coyne et al., 2016; Elliott et al., 2013; Walsh et al., 2015) with stakeholders reporting that APs' clinical leadership resulted in quality clinical care (Giles et al., 2018). It was also found that APs in their clinical leadership role influenced clinical practice, but this was primarily by mentoring and educating other colleagues rather than exerting a direct impact on patient outcomes. Both Begley et al. (2013) and Santiano et al. (2009) found that APs contributed to optimized patient outcomes by establishing, educating,

TABLE 3 Characteristics of selected studies included in the Scoping Review

Category	Details	Total
Design of studies	Qualitative (Coyne et al., 2016; Elliott et al., 2013; Santiano et al., 2009; Walsh et al., 2015)	4
	Quantitative (Van Hecke et al., 2019)	1
	Mixed Methods (Begley et al., 2013; Giles et al., 2018)	2
Geographic Location OCED	Australia (Giles et al., 2018; Santiano et al., 2009; Walsh et al., 2015)	3
	Ireland (Begley et al., 2013; Coyne et al., 2016; Elliott et al., 2013)	3
	Belgium (Van Hecke et al., 2019)	1
Settings	Acute & Community (Begley et al., 2013; Coyne et al., 2016; Elliott et al., 2013; Giles et al., 2018)	4
	Acute Only (Santiano et al., 2009; Walsh et al., 2015)	2
	University *and non-university hospitals* (Van Hecke et al., 2019)	1
Study Participants	Multiple stakeholders (excluding Service Users) (Elliott et al., 2013; Giles et al., 2018; Walsh et al., 2015)	3
	Multiple stakeholders (including Service Users) (Begley et al., 2013; Coyne et al., 2016)	2
	Advanced Practitioners Only (Santiano et al., 2009; Van Hecke et al., 2019)	2
Nomenclature Used	Clinical specialist/advanced practitioners (Begley et al., 2013; Coyne et al., 2016; Elliott et al., 2013)	3
	Nurse Consultants (Giles et al., 2018)	1
	Clinical Nurse Consultants (Santiano et al., 2009; Walsh et al., 2015)	2
	Advanced practice nurses and midwives (Van Hecke et al., 2019)	1

mentoring and leading in effective relationships within the interdisciplinary team.

4.5 | Staff-related outcomes

A number of studies highlighted that APs as clinical leaders acted as a resource for staff providing clinical expertise offering education, mentoring and coaching within interdisciplinary teams (Begley et al., 2013; Coyne et al., 2016; Elliott et al., 2013; Giles et al., 2018; Van Hecke et al., 2019; Walsh et al., 2015). This included APs acting as a mentor for disciplines outside of their own professional group (Begley et al., 2013; Elliott et al., 2013; Giles et al., 2018; Higgins et al., 2014; Santiano et al., 2009). In addition, Giles et al. (2018) highlighted that APs enacted clinical leadership through their role as a collaborator across professional boundaries (clinicians, managers and senior medical colleagues) through the coordination and management of complex patient cases.

Despite this, none of the studies established a relationship between AP clinical leadership enactment and commonly measured staff outcomes such as job satisfaction, organisational commitment or increased retention. Moreover, the studies reviewed reported outcomes for members of the interdisciplinary team who were within the APs' sphere of influence rather than outcomes for the AP themselves.

4.6 | Organisational-related outcomes

Contributing to organisational outcomes through service planning as well as updating organisational guidelines and protocols by APs were reported by Elliott et al. (2013). Giles et al. (2018) also found that the APs provided a link between managerial decision-making and the clinical-level enactment of strategic initiatives. Furthermore, the positioning of APs providing clinical leadership to influence organisational outcomes was highlighted in a number of studies (Elliott et al., 2013; Giles et al., 2018; Walsh et al., 2015). Nevertheless, it was identified that APs required role flexibility to respond and optimize their clinical leadership capacity to influence strategic organisational goals (Giles et al., 2018; Santiano et al., 2009).

5 | DISCUSSION

As far as the authors are aware, this is the first scoping review conducted on outcomes associated with clinical leadership in advanced practice roles. Literature was identified that focused on clinical leadership in AP roles; however, no objective evidence of the impact of this aspect of APs' role on patient, staff or organisational outcomes was identified.

A number of studies highlighted that clinical leadership was important to a range of outcomes, in particular in achieving optimal health outcomes for patients. A number of studies reviewed reported that the clinical leadership role of APs positively impacted on patient, staff and organisational outcomes by reducing care fragmentation and spanning professional boundaries to achieve increased integration of care (Coyne et al., 2016; Elliott et al., 2013; Giles et al., 2018; Santiano et al., 2009; Walsh et al., 2015). Elsewhere, participants in Hecke et al. (2019) expressed clinical leadership predominantly through care guideline and policy development as well as networking with other APs. However, the evidence presented relating to an association between these activities and outcomes was weak. The majority of studies had relatively small sample sizes and based this conclusion primarily on data, which was not amenable to measurement. For example, both Coyne et al. (2016) and Santiano et al. (2009) used a structured observation schedule to determine outcomes, which may raise questions regarding the validly of findings especially when participants know that they are being observed (Hackshaw, 2015). Elsewhere the perspectives of key stakeholders in addition to APs (Elliott et al., 2013; Giles et al., 2018; Walsh et al., 2015) or APs alone (Van Hecke et al., 2019) were used to establish a relationship between AP clinical leadership activities and outcomes. The perspectives of stakeholders may be problematic as research has found that stakeholders, such as those sampled in the reviewed papers, often lack understanding regarding advanced practice roles (Giles et al., 2018; Steinke et al., 2018). Moreover, while the perspectives of stakeholders and APs contribute to an understanding of the leadership role of APs, they lack tangibility and are not amenable to measurement. With respect to staff outcomes, a prominent finding from this review is that the majority of studies reviewed reported on the impact of APs' clinical leadership with respect to their clinical colleagues who benefited from mentoring and education by the APs. This contribution to the learning and development of the MDT often occurred on an informal basis (Begley et al., 2013; Elliott et al., 2013) adding to the challenge of establishing a link between this clinical leadership activity and staff outcomes. Staff outcomes for APs were not addressed so it is unknown if there is an association between clinical leadership and APs' job satisfaction, organisational commitment or intention to leave for example.

Clinical leadership has been identified as a key element in the role of APs; however, the extent to which this is operationalized is debatable (Lamb et al., 2018). Moreover, the informal nature of this leadership role may be contributing to a situation where APs are absent from involvement in health policymaking (Denker et al., 2015) and where there is an absence of interventions to sustain leadership among APs (Bressan et al., 2016). The absence of enabling structures and processes which prioritize clinical care delivery over other AP subroles (Higgins et al., 2014; Walsh et al., 2015) decreases the visibility of AP led care and leads to challenges in measuring their unique contribution.

In this review, six of the seven studies originated from Ireland or Australia where there are consistencies in the advanced practice models insofar as APs in both jurisdictions practice autonomously, are educated to master's level and have highly developed knowledge, attitudes and advanced skills which they apply in a specific area of practice (Begley et al., 2013; Lowe et al., 2013). The lack of consensus of titles related to the role may confuse and undermine confidence in advanced practice roles, act as an obstacle to role progression and may undermine an attempt to measure the impact of clinical leadership among APs (Thompson & Astin, 2019). The variety of titles used thus complicates the interpretation and synthesis of the study findings.

Many studies in this review reported different conceptualizations of clinical leadership. The studies which conceptualized clinical leadership as occurring at the clinical interface (Begley et al., 2013; Coyne et al., 2016; Elliott et al., 2013) may reasonably be expected to find different outcomes to clinical leadership enactment by APs functioning at a more strategic level where their role involves critical appraisal of service delivery, informing policy and education (Giles et al., 2018; Santiano et al., 2009).

Despite all advanced health care practitioners being included in the search criteria, only studies involving nurses working in advanced practice roles were identified. This may be reflective of the nursing focus on advanced practice (Thoun, 2011) but may also reflect a difficulty in broadening the scope of practice of other health care roles to advanced practice level (Snaith et al., 2019), which has resulted in a lack of clinical leadership research among non-nursing disciplines.

6 | STRENGTHS AND METHODOLOGICAL LIMITATIONS

Among the main strengths of this review were the systematic approach and the adoption of a reproducible method. Unambiguous search terms were used and were adapted to meet the specific requirements of the five databases searched.

Only studies published in the English language from the 36 OECD member countries were included. This risked excluding studies from middle and low income countries. The geographical concentration of studies may limit the transferability of study findings to other health care systems as leadership tends to be context specific.

To minimize the possibility of selection bias, the procedures for selecting studies detailed in the methods were rigorously adhered to. Limiting the review to papers published in the English language may have caused an incomplete overview of the relevant studies.

7 | CONCLUSION

The association between clinical leadership in advanced practice and patient, staff or organisational outcomes has not, to date, been

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

How to cite this article: Duignan M, Drennan J, McCarthy VJC. Impact of clinical leadership in advanced practice roles on outcomes in health care: A scoping review. *J Nurs Manag*. 2021;29:613–622. https://doi.org/10.1111/jonm.13189

Appendix 3: Search Strategy for Scoping Review

The search strategy for this literature review shall be guided by the protocol outlined by Aromataris and Riitano (2014). After constructing the initial logic grid (table 1), alternate synonyms and terms were identified by using CINAHL subject headings, terms suggested under MeSH entry terms and from within the literature.

Table 38: Initial Logic Grid (PICOS)

Population	Intervention	Comparison Intervention	Outcome Measures	Settings
Advanced practitioner	Clinical leadership		Patient, staff and organisational outcome	Acute, secondary and tertiary healthcare environments

Table 39: Logic Grid with identified keywords added

Population	Intervention	Comparison Intervention	Outcome Measures	Settings
Advanced practitioner Nurse practitioner, Nurse Consultant, Advanced practice nursing practitioner, Pharmacist prescriber, Advanced public health nurse, Physician, advanced radiographer practitioner, advanced practice practitioner, advanced clinical practitioner, doctor, general practitioner, extended scope practitioners, advanced practice physiotherapists	Clinical leadership, front-line leadership, Clinical governance		Patient, staff and organisational outcome, treatment outcome, patient outcome, **Patient Outcome,** Assess ment, Quality of care, Job satisfaction, patient experience times, resource use, consultation time	acute, secondary and tertiary healthcare environments, hospital, community, primary care, emergency department, accident and emergency, ambulatory centre, ambulatory center, urgent care centre, urgent care center clinics, medical office, hospital, hospice, mental health centre, mental health center, long-term care facility, long-term care facilities, rehabilitation centre, digital healthcare facility, rehabilitation center

Table 40: Logic Grid with keywords and index terms or subject headings

Population	Intervention	Outcome Measures	Settings
Advanced practitioner Nurse practitioner, Nurse Consultant, Advanced practice nursing practitioner, Pharmacist prescriber, Advanced public health nurse, Physician, advanced radiographer practitioner, advanced practice practitioner, advanced clinical practitioner, doctor, general practitioner Nurse practitioner [mh], Physician [mh], General practitioners [mh], extended scope practitioners, advanced practice physiotherapists	Clinical leadership, front-line leadership, Clinical governance, Clinical governance [mh]	Patient, staff and organisational outcome, treatment outcome, patient outcome, **Patient Outcome** Assess ment, Quality of care, Job satisfaction, patient experience times, resource use, consultation time, Standard of care, Standard of care [mh] Patient outcome assessment [mh], patient reported outcome measures [mh], treatment outcome [mh], patient preference [mh] , Outcome assessment [mh],	acute, secondary and tertiary healthcare environments, hospital, community, primary care, emergency department, accident and emergency, ambulatory centre, ambulatory center, urgent care centre, urgent care center clinics, medical office, hospital, hospice, mental health centre, mental health center, long-term care facility, long-term care facilities, rehabilitation centre, digital healthcare facility, rehabilitation center, outpatients hospital [mh], primary health care [mh], community health services [mh], emergency service, hospital [mh], rehabilitation centres [mh], outpatients [mh], Hospitals, Psychiatric [mh], medical office buildings [mh], hospice care [mh],

Table 41: Logic grid with keywords and index terms qualified with field codes and wildcard characters

Population	Intervention	Outcome Measures	Settings
Advanced practitioner [tiab] OR Nurse practitioner [tiab] OR Nurse Consultant [tiab] OR Advanced practice nursing practitioner [tiab] OR Pharmacist prescriber [tiab] OR Advanced public health nurse [tiab] OR Physician [tiab] OR advanced radiographer practitioner [tiab] OR advanced practice practitioner [tiab] OR advanced clinical practitioner [tiab] OR doctor [tiab] OR general practitioner [tiab] OR Nurse practitioner [mh] OR Physician [mh] OR General practitioners [mh] OR extended scope practitioners [tiab], advanced practice Physiotherapists [tiab]	Clinical adj2 leadership [tiab] OR front-line leadership [tiab] OR Clinical governance [tiab] OR Clinical governance [mh]	Treatment outcome [tiab] OR patient outcome [tiab] OR **Patient Outcome** Assessment [tiab] OR Quality of care [tiab] OR staff outcome [tiab] OR Job satisfaction [tiab] OR patient experience times [tiab] OR resource use [tiab] OR consultation time [tiab] OR Standard of care [tiab] OR Standard of care [mh] OR Patient outcome assessment [mh] OR patient reported outcome measures [mh] OR treatment outcome [mh] OR patient preference [mh] OR Outcome assessment [mh] OR health resources [mh] or organisational outcome [mh]	acute, secondary and tertiary healthcare environments, hospital [tiab] OR community care [tiab] OR primary care [tiab] OR emergency department [tiab] OR accident and emergency [tiab] OR ambulatory care cent* [tiab] OR urgent care cent* [tiab] OR medical office [tiab] OR hospice [tiab] OR mental health cent* [tiab] OR long-term care facilit* [tiab] OR rehabilitation cent* [tiab] OR digital healthcare facilit* [tiab] OR rehabilitation cent* [tiab] OR outpatients hospital [mh] OR primary health care [mh] OR community health services [mh] OR emergency service, hospital [mh] OR rehabilitation centres [mh] OR outpatients [mh], Hospitals OR Psychiatric [mh] OR medical office buildings [mh] OR hospice care [mh]

Appendix 4: Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	183
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	183
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	184
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	184
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	184
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	185
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	185
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	185
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	185
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	185
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	N/A

Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	186
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	188
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	188
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	N/A
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	186-187
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	185, 188-189
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	190
Limitations	20	Discuss the limitations of the scoping review process.	190
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	190
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	N/A

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

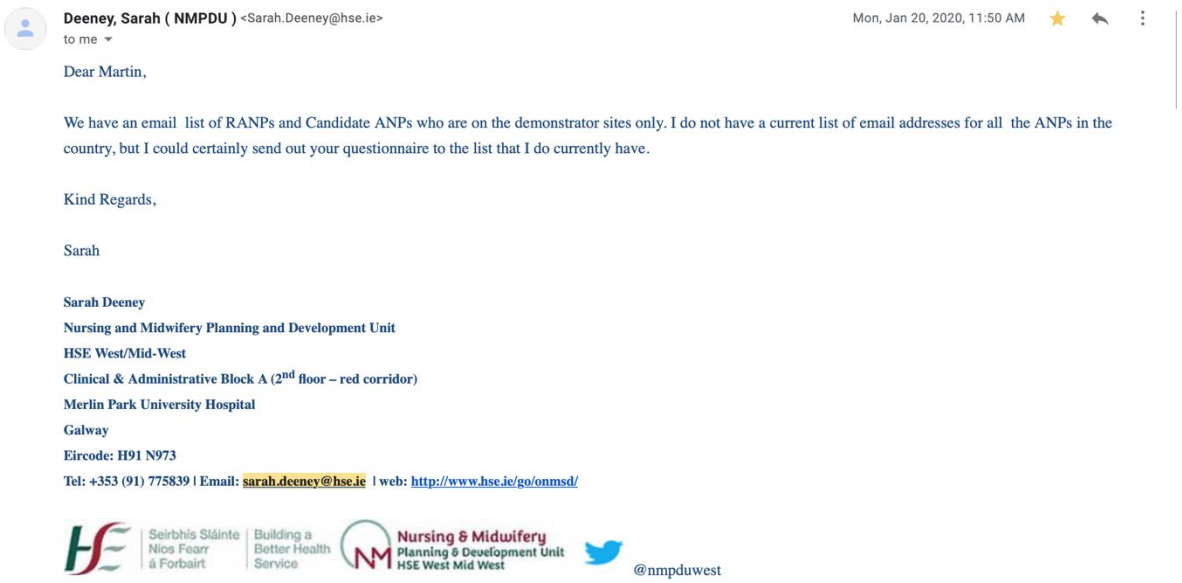
‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850

Appendix 5: Emails from two disseminating organisations agreeing to disseminate survey

Email from HSE agreeing to disseminate survey



Deeney, Sarah (NMPDU) <Sarah.Deeney@hse.ie> Mon, Jan 20, 2020, 11:50 AM
to me

Dear Martin,

We have an email list of RANPs and Candidate ANPs who are on the demonstrator sites only. I do not have a current list of email addresses for all the ANPs in the country, but I could certainly send out your questionnaire to the list that I do currently have.

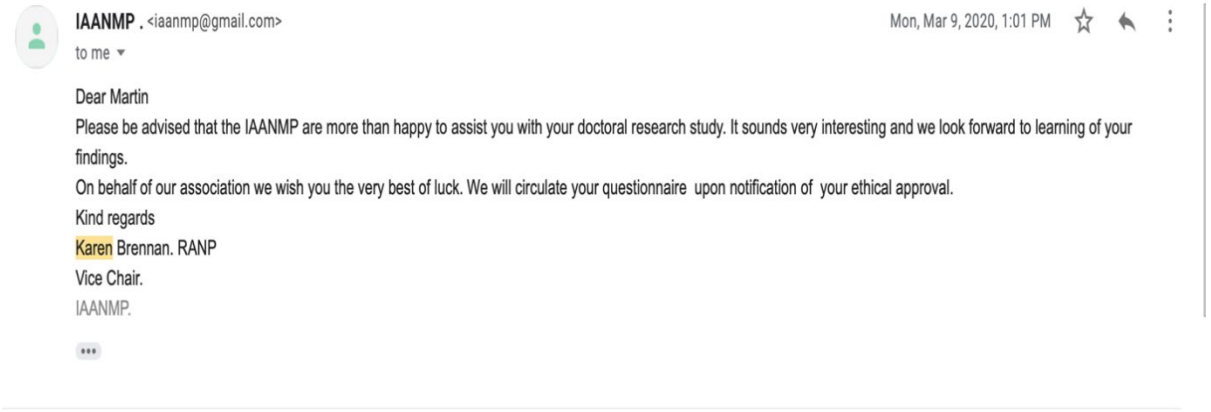
Kind Regards,

Sarah

Sarah Deeney
Nursing and Midwifery Planning and Development Unit
HSE West/Mid-West
Clinical & Administrative Block A (2nd floor – red corridor)
Merlin Park University Hospital
Galway
Eircode: H91 N973
Tel: +353 (91) 775839 | Email: sarah.deeney@hse.ie | web: http://www.hse.ie/go/onmsd/

Seirbhís Sláinte Nios Fearr á Forbairt | Building a Better Health Service
Nursing & Midwifery Planning & Development Unit HSE West Mid West
@nmpduwest

Email from IAANMP agreeing to disseminate survey



IAANMP . <iaanmp@gmail.com> Mon, Mar 9, 2020, 1:01 PM
to me

Dear Martin
Please be advised that the IAANMP are more than happy to assist you with your doctoral research study. It sounds very interesting and we look forward to learning of your findings.
On behalf of our association we wish you the very best of luck. We will circulate your questionnaire upon notification of your ethical approval.
Kind regards
Karen Brennan. RANP
Vice Chair.
IAANMP.

Appendix 6: Text of invitational email to ANPs by HSE and IAANMP

Email text to accompany email

Dear Advanced Nurse Practitioner,

This email is being sent on behalf of Martin Duignan. Martin is undertaking a Doctor of Nursing programme in University College Cork and as part of this, conducting a study on self-leadership factors and their association with a range of psychosocial outcomes among advanced nurse practitioners (ANPs) in Ireland.

His research supervisors are Professor Jonathan Drennan, http://research.ucc.ie/profiles/C014/jonathandrennan and Dr. Vera McCarthy http://research.ucc.ie/profiles/C014/vmccarthy from the School of Nursing and Midwifery, UCC.

Should you wish to take part in this research, you will be asked to complete an anonymous questionnaire which will take approximately 20minutes of your time. No identifiable information will be collected about you in this study. The link to the survey is available at the end of this email.
Your participation in this research is voluntary and should you chose to participate, you are free to withdraw at any time up until you submit your completed survey.

Please only complete the survey once even if you receive this email invite from two different sources. The researchers would like to apologise for this inconvenience, which is necessary to ensure that all ANPs have the opportunity to participate.

Thank you for considering participating. Should you have any questions or require clarification please contact Martin directly at116224487@umail.ucc.ie

If you wish to proceed the questionnaire is located here:
https://docs.google.com/forms/d/1pvGvcdwWyRrnka7iuOYdBMtSJWcnzfXSG6-7xzOR60g/edit

Yours Sincerely,

•••

Appendix 7: Ethical Approval

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Martin Duignan <116224487@umail.ucc.ie>

Amendment request Log 2020-108A1 - Approved

Ethics Committee, Social Research <srec@ucc.ie> Thu, Jul 30, 2020 at 12:03 PM
To: Martin Duignan <116224487@umail.ucc.ie>

Dear Martin

The Social Research and Ethics Committee has now approved your amendment request 2020-108A1 for previously approved application Log 2020-108 entitled "Self-leadership strategies and psychosocial outcomes among advanced nurse practitioners in Ireland."

The committee wishes you every success with your research.

All the best

Liz

Liz Hales I Coordinator, Social Research Ethics Committee, University College Cork I srec@ucc.ie I Phone +353 (0)21 4903234

Independent Thinking, Shared Ambition: UCC Strategic Plan 2017-2022

Watch University College Cork: River of Life

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Appendix 8: Final reminder and thank you email to respondents

Thank You and Final Reminder

Martin.Duignan@hse.ie <Martin.Duignan@hse.ie> Sun, Aug 23, 2020 at 9:35 PM
To: Martin Duignan <116224487@umail.ucc.ie>

Dear Sarah,

Please find below the text for the final reminder for my doctoral research. I would like to thank you and Mary Frances most sincerely for agreeing to disseminate my survey. I have responses from circa 30% of ANPs nationally, which I am really happy with.

Thanks again,

Martin

Martin Duignan

FFNMRCSI, MSc (Sport Medicine, Exercise & Health), MSc (Nursing) BSc, H.Dip (ED), Dip (Mgt), RGN, RANP, RNP
Registered Advanced Nurse Practitioner (Emergency)
Honorary Clinical Associate, Faculty of Nursing & Midwifery, Royal College of Surgeons in Ireland
NMBI PIN: 00065317

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Martin Duignan would like to sincerely thank the significant proportion of advanced nurse practitioners (ANPs) who have taken the time from their busy clinical workloads to participate in his research, and give a final opportunity to those ANPs who still wish to participate to do so. As you are aware this research aims to provide insight into the self-leadership practices of ANPs in Ireland and their association with a range of psychosocial outcomes among ANPs in Ireland.

Should you wish to take part in this research, you will be asked to complete an anonymous questionnaire which will take approximately 20 minutes of your time. No identifiable information will be collected about you in this study. The link to the survey is available at the end of this email. Your participation in this research is voluntary and should you chose to participate, you are free to withdraw at any time up until you submit your completed survey.

Please only complete the survey once even if you receive this email invite from two different sources. The researchers would like to apologise for this inconvenience, which is necessary to ensure that all ANPs have the opportunity to participate.

Thank you for considering participating. The research will close to respondents next Monday August 31st 2020. Should you have any questions or require clarification please contact Martin directly at116224487@umail.ucc.ie

If you wish to proceed the questionnaire is located here:
https://docs.google.com/forms/d/1pvGvcdwWyRrnka7iuOYdBMtSJWcnzfXSG6-7xzOR60g/edit

Yours Sincerely,

Appendix 9: Survey

Self-leadership strategies and psychosocial outcomes among advanced nurse practitioners in Ireland

Thank you for considering participating in this research project. The purpose of this document is to explain to you what the work is about and what your participation would involve, so as to enable you to make an informed choice.

The purpose of this study is to investigate if there is a relationship between advanced nurse practitioners' self-leadership strategies and a range of psychosocial outcomes. Should you choose to participate, you will be asked to complete a 57 item questionnaire, which will include items on self- leadership, work engagement, commitment to work, influence at work, job satisfaction and intention to leave.

Participation in this study is completely voluntary. There is no obligation to participate, and should you choose to do so you can refuse to answer specific questions, or decide to withdraw from the study without any consequences of any kind. All information you provide will be confidential and your anonymity will be protected throughout the study. IP addresses will not be collected at any point, meaning the data you provide cannot be traced back to you.

You maintain the right to withdraw from the study at any stage up to the point of data submission. At this point your data will be collated with that of other participants and can no longer be retracted as there are no identifiers to link it to you.

The anonymous data will be stored on a University College Cork supported drive system and subsequently on the UCC server. The data will be stored for a minimum of 10 years. The information you provide will contribute to my doctoral thesis and may contribute to research publications and/or conference presentations.

We do not anticipate any negative outcomes from participating in this study. Should you experience distress arising from participating in the research, the contact details for support services provided below may be of assistance.

This study has obtained ethical approval from the UCC Social Research Ethics Committee. If you have

any queries about this research, you can contact me (Martin Duignan) at 116224487@umail.ucc.ie or my research supervisors Professor Jonathan Drennan (jonathan.drennan@ucc.ie) and Dr. Vera McCarthy (v.mccarthy@ucc.ie). If you agree to take part in this

study, please complete the consent below.

Contact details for HSE Employee Assistance and Counseling Service: https://www.hse.ie/eng/staff/workplace-health-and-wellbeing-unit/employee-assistance-and- counselling-service/

* Required

ELECTRONIC CONSENT: Please select your choice below. Clicking on the "agree" button below indicates that:

- **you have read the above information**
- **you voluntarily agree to participate**
- **you are an Advanced Nurse Practitioner working in the Irish Health Service**

If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button

1. **Electronic Consent** *

Mark only one oval.

- ◯ Agree
- ◯ Disagree

Demographics

2. To which gender do you most identify?

Mark only one oval.

- ◯ Female
- ◯ Male
- ◯ Prefer not to say
- ◯ Other: _____

3. What is your age?

Mark only one oval.

- ◯ 18 to 24
- ◯ 25 to 34
- ◯ 35 to 44
- ◯ 45 to 54
- ◯ 55 to 64
- ◯ 65 o 74

4. How many years have you being practicing as an Advanced Nurse Practitioner

Mark only one oval.

- Less than 1 year
- At least 1 year but less than 3 years
- At least 3 year but less than 5 years
- At least 5 year but less than 10 years
- 10 years or more

5. About how many years have you been in your current position?

Mark only one oval.

- Less than 1 year
- At least 1 year but less than 3 years
- At least 3 year but less than 5 years
- At least 5 year but less than 10 years
- 10 years or more

6. What percentage of your shifts do you work as a lone practitioner

Mark only one oval.

- Less than 25%
- At least 25% but less than 50%
- At least 50% but less than 75%
- More than 75% but less than 100%
- 100%

Self Leadership Questionnaire

35 Items

7. I use my imagination to picture myself performing well on important tasks.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

8. I establish specific goals for my own performance.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

9. Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

10. When I do an assignment especially well, I like to treat myself to some thing or activity I especiallyenjoy.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

11. I think about my own beliefs and assumptions whenever I encounter a difficult situation.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

12. I tend to get down on myself in my mind when I have performed poorly

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

13. I make a point to keep track of how well I'm doing at work.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

14. I focus my thinking on the pleasant rather than the unpleasant aspects of my job activities

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

15. I use written notes to remind myself of what I need to accomplish.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completel

16. I visualize myself successfully performing a task before I doit.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

17. I consciously have goals in mind for my workefforts.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

18. Sometimes I talk to myself (out loud or in my head) to work through difficult situations.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

19. When I do something well, I reward myself with a special event such as a good dinner, movie, shopping trip, etc.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

20. I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

21. I tend to be tough on myself in my thinking when I have not done well on a task.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

22. I usually am aware of how well I'm doing as I perform an activity.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

23. I try to surround myself with objects and people that bring out my desirable behaviors.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

24. I use concrete reminders (e.g., notes and lists) to help me focus on things I need to accomplish.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

25. Sometimes I picture in my mind a successful performance before I actually do a task

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

26. I work toward specific goals I have set for myself.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

27. When I'm in difficult situations I will sometimes talk to myself (out loud or in my head) to help me get through it.

Mark only one oval.

- ◯ Not at all
- ◯ Somewhat
- ◯ A little
- ◯ Mostly
- ◯ Completely

28. When I have successfully completed a task, I often reward myself with something I like.

Mark only one oval.

- ◯ Not at all
- ◯ Somewhat
- ◯ A little
- ◯ Mostly
- ◯ Completely

29. I openly articulate and evaluate my own assumptions when I have a disagreement with someone else.

Mark only one oval.

- ◯ Not at all
- ◯ Somewhat
- ◯ A little
- ◯ Mostly
- ◯ Completely

30. I feel guilt when I perform a task poorly

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

31. I pay attention to how well I'm doing in my work

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

32. When I have a choice, I try to do my work in ways that I enjoy rather than just trying to get it over with.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

33. I purposefully visualize myself overcoming the challenges I face.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

34. I think about the goals that I intend to achieve in the future.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

35. I think about and evaluate the beliefs and assumptions I hold.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Complete

36. I sometimes openly express displeasure with myself when I have not done well.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

37. I keep track of my progress on projects I'm working on.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

38. I seek out activities in my work that I enjoy doing.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

39. I often mentally rehearse the way I plan to deal with a challenge before I actually face the challenge.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

40. I write specific goals for my ownperformance.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

41. I find my own favourite ways to get things done.

Mark only one oval.

- Not at all
- Somewhat
- A little
- Mostly
- Completely

Commitment to the Workplace (5 Items)

42. Do you enjoy telling others about your place of work?

Mark only one oval.

- To a very large extent
- To a large extent
- Somewhat
- To a small extent
- To a very small extent

43. Do you feel that your place of work is of great importance to you?

Mark only one oval.

- To a very large extent
- To a large extent
- Somewhat
- To a small extent
- To a very small extent

44. Would you recommend other people to apply for a position at your workplace?

Mark only one oval.

- To a very large extent
- To a large extent
- Somewhat
- To a small extent
- To a very small extent

45. How often do you consider looking for work elsewhere?

Mark only one oval.

- To a very large extent
- To a large extent
- Somewhat
- To a small extent
- To a very small extent

46. Are you proud of being part of this organization

Mark only one oval.

- To a very large extent
- To a large extent
- Somewhat
- To a small extent
- To a very small extent

Work Engagement (3 Items)

How often do you experience the following?

47. At my work, I feel bursting with energy.

Mark only one oval.

- Never
- Seldom
- Sometimes
- Often
- Always

48. I am enthusiastic about my job

Mark only one oval.

- Never
- Seldom
- Sometimes
- Often
- Always

49. I am immersed in my work.

Mark only one oval.

- Never
- Seldom
- Sometimes
- Often
- Always

Influence at Work (6 Items)

50. Do you have a large degree of influence on the decisions concerning your work?

Mark only one oval.

- ◯ Always
- ◯ Often
- ◯ Sometimes
- ◯ Seldom
- ◯ Never/hardly ever

51. Do you have a say in choosing who you work with?

Mark only one oval.

- ◯ To a very large extent
- ◯ To a large extent
- ◯ Somewhat
- ◯ To a small extent
- ◯ To a very small extent

52. Can you influence the amount of work assigned to you?

Mark only one oval.

- ◯ Always
- ◯ Often
- ◯ Sometimes
- ◯ Seldom
- ◯ Never/hardly ever

53. Do you have any influence on what you do at work?

Mark only one oval.

- Always
- Often
- Sometimes
- Seldom
- Never/hardly ever

54. Can you influence how quickly you work?

Mark only one oval.

- Always
- Often
- Sometimes
- Seldom
- Never/hardly ever

55. Do you have any influence on HOW you do your work?

Mark only one oval.

- Always
- Often
- Sometimes
- Seldom
- Never/hardly ever

Job Satisfaction

56. How satisfied are you with your current job?

Mark only one oval.

- Very satisfied
- Satisfied
- Unsatisfied
- Very unsatisfied

Intention to Leave

50. 57. If possible, would you leave your current job within the next year as a result of job dissatisfaction

Mark only one oval.

- Yes
- No

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Google Forms

Appendix 10: Confirmatory Factor Analysis Output

First Order Factor Analysis Summary

Analysis Summary
Date and Time
Date: Friday, November 19, 2021
Time: 3:26:27 PM
Title
Cfa model 01: Friday, November 19, 2021 3:26 PM
Groups
Group number 1 (Group number 1)
Notes for Group (Group number 1)
The model is recursive.
Sample size = 153
Variable Summary (Group number 1)
Your model contains the following variables (Group number 1)
Observed, endogenous variables
Q2
Q11
Q20
Q28
Q34
Q4
Q13
Q22
Q6
Q15
Q24
Q30
Q7
Q16
Q25
Q31
Q9
Q18
Q35
Q32
Q26
Q17
Q8
Q1
Q10
Q19
Q27
Q33
Q21
Q12
Q3

Q29
Q23
Q14
Q5
Unobserved, endogenous variables
SGS
SR
SP
SO
CU
VSP
ST
EBA
Unobserved, exogenous variables
e2
e11
e20
e28
e34
e4
e13
e22
e6
e15
e24
e30
e7
e16
e25
e31
e9
e18
NRS_f
e35
e32
e26
e17
e8
e1
e10
e19
e27
e33
e21
e12
e3
e29
e23
e14
e5

BFS
CTPS
ef1
ef4
ef5
ef2
ef3
ef6
ef7
ef8

Variable counts (Group number 1)

Number of variables in your model:	89
Number of observed variables:	35
Number of unobserved variables:	54
Number of exogenous variables:	46
Number of endogenous variables:	43

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	52	0	2	0	0	54
Labeled	0	0	0	0	0	0
Unlabeled	34	3	44	0	35	116
Total	86	3	46	0	35	170

Models
Default model (Default model)
Notes for Model (Default model)
Computation of degrees of freedom (Default model)

Number of distinct sample moments:	665
Number of distinct parameters to be estimated:	116
Degrees of freedom (665 - 116):	549

Result (Default model)
Minimum was achieved
Chi-square = 797.636
Degrees of freedom = 549
Probability level = .000
Group number 1 (Group number 1 - Default model)
Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates
Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
SP	<---	BFS	-.229	.091	-2.512	.012	
SGS	<---	BFS	.588	.074	7.971	***	
SO	<---	BFS	.615	.101	6.071	***	
SR	<---	BFS	.474	.091	5.193	***	
CU	<---	BFS	.519	.113	4.575	***	

			Estimate	S.E.	C.R.	P	Label
EBA	<---	CTPS	.651	.091	7.115	***	
ST	<---	CTPS	.533	.097	5.514	***	
VSP	<---	CTPS	.510	.096	5.291	***	
Q2	<---	SGS	1.000				
Q11	<---	SGS	1.099	.152	7.252	***	
Q20	<---	SGS	1.108	.134	8.238	***	
Q28	<---	SGS	1.223	.148	8.256	***	
Q34	<---	SGS	1.346	.181	7.418	***	
Q4	<---	SR	1.000				
Q13	<---	SR	1.066	.097	11.017	***	
Q22	<---	SR	1.189	.106	11.255	***	
Q6	<---	SP	1.000				
Q15	<---	SP	1.014	.118	8.599	***	
Q24	<---	SP	.876	.108	8.103	***	
Q30	<---	SP	.903	.118	7.632	***	
Q7	<---	SO	1.000				
Q16	<---	SO	.611	.117	5.215	***	
Q25	<---	SO	.800	.133	6.026	***	
Q31	<---	SO	.822	.146	5.613	***	
Q9	<---	CU	1.000				
Q18	<---	CU	1.137	.192	5.938	***	
Q35	<---	NRS_f	1.000				
Q32	<---	NRS_f	1.078	.222	4.859	***	
Q26	<---	NRS_f	.972	.194	5.019	***	
Q17	<---	NRS_f	.981	.221	4.429	***	
Q8	<---	NRS_f	.775	.191	4.053	***	
Q1	<---	VSP	1.000				
Q10	<---	VSP	1.502	.281	5.352	***	
Q19	<---	VSP	1.601	.285	5.621	***	
Q27	<---	VSP	1.353	.260	5.202	***	
Q33	<---	VSP	1.174	.233	5.045	***	
Q21	<---	ST	1.000				
Q12	<---	ST	.945	.076	12.446	***	
Q3	<---	ST	.853	.084	10.119	***	
Q29	<---	EBA	1.000				
Q23	<---	EBA	.642	.145	4.427	***	
Q14	<---	EBA	1.105	.173	6.397	***	
Q5	<---	EBA	.503	.133	3.787	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
SP	<---	BFS	-.244
SGS	<---	BFS	.884
SO	<---	BFS	.807
SR	<---	BFS	.488
CU	<---	BFS	.528
EBA	<---	CTPS	.899
ST	<---	CTPS	.499
VSP	<---	CTPS	.840
Q2	<---	SGS	.683
Q11	<---	SGS	.662
Q20	<---	SGS	.767
Q28	<---	SGS	.770
Q34	<---	SGS	.680
Q4	<---	SR	.741
Q13	<---	SR	.882
Q22	<---	SR	.937
Q6	<---	SP	.753
Q15	<---	SP	.789
Q24	<---	SP	.728
Q30	<---	SP	.682
Q7	<---	SO	.578
Q16	<---	SO	.565
Q25	<---	SO	.716
Q31	<---	SO	.633
Q9	<---	CU	.737
Q18	<---	CU	.930
Q35	<---	NRS_f	.521
Q32	<---	NRS_f	.567
Q26	<---	NRS_f	.599
Q17	<---	NRS_f	.488
Q8	<---	NRS_f	.430
Q1	<---	VSP	.478
Q10	<---	VSP	.714
Q19	<---	VSP	.819
Q27	<---	VSP	.672
Q33	<---	VSP	.630
Q21	<---	ST	.915
Q12	<---	ST	.856
Q3	<---	ST	.719
Q29	<---	EBA	.649

		Estimate
Q23	<--- EBA	.432
Q14	<--- EBA	.691
Q5	<--- EBA	.364

Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
Q2	3.869	.079	48.937	***	
Q11	3.647	.090	40.678	***	
Q20	3.765	.078	48.259	***	
Q28	3.723	.086	43.347	***	
Q34	2.940	.107	27.458	***	
Q4	2.752	.106	25.897	***	
Q13	2.281	.095	23.952	***	
Q22	2.459	.100	24.562	***	
Q6	2.616	.101	25.847	***	
Q15	2.301	.098	23.538	***	
Q24	2.136	.092	23.308	***	
Q30	2.890	.101	28.633	***	
Q7	3.242	.107	30.309	***	
Q16	3.811	.067	56.836	***	
Q25	4.078	.069	59.018	***	
Q31	3.728	.081	46.206	***	
Q9	3.373	.108	31.106	***	
Q18	3.712	.098	38.053	***	
Q35	3.603	.087	41.246	***	
Q32	3.692	.086	42.968	***	
Q26	3.926	.073	53.607	***	
Q17	3.471	.090	38.385	***	
Q8	3.595	.081	44.337	***	
Q1	2.794	.104	26.887	***	
Q10	2.869	.104	27.708	***	
Q19	2.745	.096	28.546	***	
Q27	3.103	.100	31.176	***	
Q33	3.527	.092	38.294	***	
Q21	3.108	.095	32.845	***	
Q12	3.268	.095	34.227	***	
Q3	3.033	.103	29.557	***	
Q29	3.210	.091	35.421	***	
Q23	3.235	.087	37.029	***	
Q14	3.046	.094	32.466	***	
Q5	3.386	.081	41.617	***	

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
NRS_f	<-->	BFS	.491	.087	5.671	***	
CTPS	<-->	BFS	.835	.058	14.375	***	
CTPS	<-->	NRS_f	.448	.084	5.335	***	

Correlations: (Group number 1 - Default model)

			Estimate
NRS_f	<-->	BFS	.885
CTPS	<-->	BFS	.835
CTPS	<-->	NRS_f	.807

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BFS	1.000				
CTPS	1.000				
NRS_f	.308	.101	3.039	.002	
ef1	.826	.168	4.917	***	
ef4	.097	.038	2.558	.011	
ef5	.719	.143	5.024	***	
ef2	.203	.077	2.633	.008	
ef3	.698	.160	4.356	***	
ef6	.100	.065	1.542	.123	
ef7	.854	.137	6.224	***	
ef8	.108	.047	2.277	.023	
e2	.507	.067	7.600	***	
e11	.687	.089	7.723	***	
e20	.382	.055	6.880	***	
e28	.455	.067	6.825	***	
e34	.933	.123	7.597	***	
e4	.773	.100	7.718	***	
e13	.306	.061	5.007	***	
e22	.187	.065	2.856	.004	
e6	.673	.107	6.285	***	
e15	.549	.097	5.678	***	
e24	.598	.090	6.624	***	
e30	.825	.116	7.117	***	
e7	1.158	.153	7.544	***	
e16	.463	.061	7.599	***	
e25	.354	.057	6.206	***	
e31	.588	.083	7.102	***	
e9	.814	.173	4.704	***	
e18	.196	.189	1.035	.301	

	Estimate	S.E.	C.R.	P	Label
e35	.828	.107	7.761	***	
e32	.754	.100	7.558	***	
e26	.520	.071	7.364	***	
e17	.946	.118	8.003	***	
e8	.814	.099	8.206	***	
e1	1.247	.152	8.200	***	
e10	.799	.112	7.142	***	
e19	.462	.082	5.624	***	
e27	.819	.110	7.437	***	
e33	.771	.100	7.687	***	
e21	.221	.069	3.195	.001	
e12	.369	.072	5.142	***	
e3	.773	.102	7.587	***	
e29	.719	.106	6.803	***	
e23	.944	.116	8.155	***	
e14	.698	.111	6.273	***	
e5	.868	.104	8.319	***	

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 21		-.484	9999.000	2815.555	0	9999.000
1	e 11		-.274	3.093	1811.456	20	.595
2	e 7		-.142	1.251	1374.076	5	.946
3	e 4		-.104	.704	1186.091	4	.923
4	e 2		-.054	.993	995.610	5	.877
5	e 0	843.410		.859	866.943	5	.857
6	e 1		-.007	.908	845.176	2	.000
7	e 0	1976.004		.463	811.387	5	.881
8	e 0	438.083		.562	803.538	2	.000
9	e 0	765.230		.504	798.299	1	1.124
10	e 0	1278.992		.226	797.684	1	1.137
11	e 0	1562.009		.094	797.636	1	1.074
12	e 0	1634.193		.013	797.636	1	1.014
13	e 0	1595.371		.000	797.636	1	1.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	116	797.636	549	.000	1.453
Saturated model	665	.000	0		
Independence model	35	2732.223	630	.000	4.337

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.708	.665	.886	.864	.882
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.871	.617	.768
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	248.636	177.364	327.906
Saturated model	.000	.000	.000
Independence model	2102.223	1944.173	2267.752

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	5.248	1.636	1.167	2.157
Saturated model	.000	.000	.000	.000
Independence model	17.975	13.830	12.791	14.919

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.055	.046	.063	.180
Independence model	.148	.142	.154	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1029.636	1101.636		
Saturated model	1330.000	1742.759		
Independence model	2802.223	2823.947		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	6.774	6.305	7.295	7.248
Saturated model	8.750	8.750	8.750	11.466
Independence model	18.436	17.396	19.525	18.579

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	116	120
Independence model	39	40

Execution time summary

Minimization: .378

Miscellaneous: 3.033

Bootstrap:	.000
Total:	3.411

Second Order Factor Analysis Summary

Date and Time
Date: Monday 28 March 2022
Time: 17:54:14
Title
standardised 28-04-22: Monday 28 March 2022 17:54
Groups
Group number 1 (Group number 1)
Notes for Group (Group number 1)
The model is recursive.
Sample size = 153
Variable Summary (Group number 1)
Your model contains the following variables (Group number 1)
Observed, endogenous variables
BFS_SGS_Total_Mean
BFS_SR_Mean_Total
BFS_SP_Mean_Total
Q25
Q32
Q35
BFS_SO_Mean_Total
BFS_SC_Mean_Total
CTPS_ST_Mean_Total
CTPS_EBAA_Mean_Total
CTPS_VSP_Mean_Total
Unobserved, endogenous variables
BFS
Natural_Reward
Constructive_Thought
SL
Unobserved, exogenous variables
e1
e2
e3
e4
e5
e6
e7
e8
e9
e10
e11
e12
e13
e14

e15
Variable counts (Group number 1)
Number of variables in your model: 30
Number of observed variables: 11
Number of unobserved variables: 19
Number of exogenous variables: 15
Number of endogenous variables: 15
Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	19	0	0	15	4	38
Labeled	0	0	0	0	0	0
Unlabeled	10	0	15	0	11	36
Total	29	0	15	15	15	74

Models
Default model (Default model)
Notes for Model (Default model)
Computation of degrees of freedom (Default model)
Number of distinct sample moments: 77
Number of distinct parameters to be estimated: 36
Degrees of freedom (77 - 36): 41
Result (Default model)
Minimum was achieved
Chi-square = 166.036
Degrees of freedom = 41
Probability level = .000
Group number 1 (Group number 1 - Default model)
Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates
Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
BFS	<---	SL	1.000				
Natural_Reward	<---	SL	.992	.133	7.460	***	
Constructive_Thought	<---	SL	.557	.125	4.452	***	
BFS_SGS_Total_Mean	<---	BFS	1.000				
BFS_SR_Mean_Total	<---	BFS	.711	.157	4.523	***	
BFS_SP_Mean_Total	<---	BFS	.389	.089	4.350	***	
Q25	<---	Natural_Reward	1.000				

			Estimate	S.E.	C.R.	P	Label
Q32	<---	Natural_Reward	.853	.146	5.825	***	
Q35	<---	Natural_Reward	.625	.146	4.289	***	
BFS_SO_Mean_Total	<---	BFS	1.011	.103	9.854	***	
BFS_SC_Mean_Total	<---	BFS	.756	.164	4.618	***	
CTPS_ST_Mean_Total	<---	Constructive_Thought	1.000				
CTPS_EBAA_Mean_Total	<---	Constructive_Thought	1.099	.217	5.066	***	
CTPS_VSP_Mean_Total	<---	Constructive_Thought	1.285	.256	5.026	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
BFS	<---	SL	1.056
Natural_Reward	<---	SL	1.143
Constructive_Thought	<---	SL	.699
BFS_SGS_Total_Mean	<---	BFS	.724
BFS_SR_Mean_Total	<---	BFS	.386
BFS_SP_Mean_Total	<---	BFS	.372
Q25	<---	Natural_Reward	.655
Q32	<---	Natural_Reward	.451
Q35	<---	Natural_Reward	.327
BFS_SO_Mean_Total	<---	BFS	.843
BFS_SC_Mean_Total	<---	BFS	.394
CTPS_ST_Mean_Total	<---	Constructive_Thought	.479
CTPS_EBAA_Mean_Total	<---	Constructive_Thought	.756
CTPS_VSP_Mean_Total	<---	Constructive_Thought	.726

Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BFS_SGS_Total_Mean	3.589	.068	52.723	***	
BFS_SR_Mean_Total	2.498	.091	27.546	***	
BFS_SP_Mean_Total	3.180	.052	61.618	***	
Q25	4.078	.069	59.018	***	
Q32	3.689	.086	42.859	***	
Q35	3.599	.087	41.133	***	
BFS_SO_Mean_Total	3.715	.059	62.819	***	
BFS_SC_Mean_Total	3.542	.094	37.505	***	
CTPS_ST_Mean_Total	3.136	.087	36.179	***	
CTPS_EBAA_Mean_Total	3.220	.060	53.329	***	
CTPS_VSP_Mean_Total	3.008	.073	40.962	***	

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e15	.412	.086	4.783	***	
e12	-.043	.037	-1.154	.248	
e13	-.095	.052	-1.816	.069	
e14	.134	.052	2.571	.010	
e1	.335	.045	7.501	***	
e2	1.063	.125	8.539	***	
e3	.349	.041	8.554	***	
e4	.415	.062	6.670	***	
e5	.888	.106	8.419	***	
e6	1.015	.118	8.636	***	
e7	.154	.028	5.598	***	
e8	1.145	.134	8.529	***	
e9	.880	.110	7.972	***	
e10	.238	.046	5.184	***	
e11	.387	.068	5.725	***	

Notes for Group/Model (Group number 1 - Default model)

The following variances are negative. (Group number 1 - Default model)

	e12	e13
	-.043	-.095

This solution is not admissible.

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	7		-.172	9999.000	671.223	0	9999.000
1	e	3		-.113	1.825	394.712	20	.671
2	e	2		-.132	1.244	251.660	5	.825
3	e	0	871.934		.456	198.203	5	.910
4	e	0	665.218		.469	177.011	2	.000
5	e	0	791.450		.385	167.742	1	1.167
6	e	0	1265.917		.248	166.262	1	1.167
7	e	0	1887.487		.127	166.048	1	1.132
8	e	0	2101.028		.040	166.036	1	1.046
9	e	0	2165.588		.003	166.036	1	1.004
10	e	0	2170.426		.000	166.036	1	1.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	36	166.036	41	.000	4.050
Saturated model	77	.000	0		
Independence model	11	603.404	66	.000	9.142

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.725	.557	.778	.625	.767
Saturated model	1.000		1.000		1.000

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.621	.450	.477
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	125.036	89.069	168.569
Saturated model	.000	.000	.000
Independence model	537.404	462.528	619.743

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.092	.823	.586	1.109
Saturated model	.000	.000	.000	.000
Independence model	3.970	3.536	3.043	4.077

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.142	.120	.164	.000
Independence model	.231	.215	.249	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	238.036	244.208		
Saturated model	154.000	167.200		
Independence model	625.404	627.290		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.566	1.329	1.852	1.607
Saturated model	1.013	1.013	1.013	1.100
Independence model	4.115	3.622	4.656	4.127

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	53	60
Independence model	22	25

Execution time summary

Minimization: .020
Miscellaneous: .407
Bootstrap: .000
Total: .427

Appendix 11: Univariable findings with Bonferroni adjustment

The following appendix presents the study findings with multiplicity adjustment included. The first section outlines the arguments for and against the need to adjust for multiplicity in general and selection of Bonferroni correction, which is a widely used solution for correcting issues, in particular.

There is agreement that family wise error rate increases across a collection of statistical analyses on the same sample of data (Vickerstaff *et al.*, 2019). There is significant debate in the statistical literature which discusses the issues which arise from multiple analyses on the same data. Some commentators assert that multiplicity adjustments are critical for repeated testing of hypotheses, and when overlooked result in inadequate results and misleading inferences.

Bonferroni adjustment is a widely used solution for correcting issues related to multiple comparisons and is a conservative approach to controlling familywise error. It has been argued that Bonferroni adjustment may be too stringent and requires judicious application as it may impede sound statistical inference (Nakagawa, 2004; Perneger, 1998). In addition to being unnecessarily conservative (with weak statistical power) it has been suggested that a bonferroni adjustment often fails to detect real differences as the adjusted α is often smaller than required, particularly when there are many tests and/or the test statistics are positively correlated (Lee and Lee 2018) (Lee and Lee, 2018) which may result in researchers failing to reject the null hypothesis H0, even when there is a difference H1=true (Nakagawa, 2004). A third issue which arises is that there does not seem to be consensus in the statistical literature on how the magnitude of error is calculated with respect to familywise error (i.e. is there a linear relationship between each single analysis and the type 1 error rate?). A central tenet of Perneger, (1998) paper is that applying a Bonferroni correction does not test the hypothesis of interest, as the family wise error rate only applies when the two groups are identical on all variables.

Self-leadership and Gender

Table 37 shows the results of the independent samples *t*-tests conducted examining differences in the means of overall self-leadership, the behaviour focused strategies dimension, the constructive thought pattern strategies dimension and natural reward strategies dimension in relation to gender. Given the number of t-test analyses performed in the present study, family-wise error was controlled using a Bonferroni correction. A total of 4 analyses were performed in each independent samples t-test resulting in a more restrictive p value of $p = 0.01$. Levene's tests were first conducted to determine whether the assumption of the equality of variances was upheld or not. A probability value of <0.05 associated with this test indicates that the assumption of the equality of variances was violated. The assumption of the equality of variances was violated for the dimension of constructive thought patterns ($p = 0.04$) and the overall self-leadership score ($p < 0.01$). In these analyses the *t*-tests were conducted not assuming equality of variances; independent-samples *t*-tests were conducted assuming the equality of variances in the remaining tests. The application of the Bonferroni adjustment influenced the final significance judgments for the dimension of behaviour focused strategies.

Table 42: Independent-samples t-test results for overall RSLQ and dimensions by respondent gender (n=152)

Scales	Male (n = 27)	Female (n = 125)	DM‡ [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
†*BFS*	3.09 (0.68)	3.34 (0.93)	-0.26 [-.51, -.01]	0.05	.31
†*CTPS*	3.28 (0.86)	3.08 (0.68)	0.20 [-.10, .50]	0.28	.26
†*NRS*	3.54 (0.73)	3.68 (0.65)	-0.14 [-.42, .14]	0.33	.20
***RSLQ-Total Score**	**3.28 (0.67)**	**3.35 (0.50)**	**-0.06 [-.34, .22]**	**0.50**	**.12**

Note: $p \leq 0.05$; *n = 153 BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; †Self-Leadership Dimension; ‡DM: Difference in Means; ¶Confidence Interval

Self-Leadership and Age

Independent samples *t*-tests were conducted to compare the means of the total RSLQ and its dimensions based on ANP age (table 38). The assumption of the equality of variances was not violated for the included variables, and so independent-samples *t*-tests were conducted assuming equality of variances. The standardised difference between two means was determined by calculating Cohen's *d* with the values found indicating trivial effect sizes. No significant differences were found in reported self-leadership based on respondents' gender in these analyses. Applying a Bonferroni correction resulted in a more restrictive p value of $p < 0.01$ alpha value of 0.01 (0.05/4). The application of the Bonferroni adjustment did not influence the final significance judgments for *t*-tests conducted to compare the means of the total RSLQ and its dimensions based on ANP age.

Table 43: Independent-samples t-test results for overall RSLQ and dimensions by respondent age (n = 152)

Scales	25-44 Years	45-64 Years	DM‡ [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
†*BFS*	3.34 (0.59)	3.27 (0.63)	0.67 [-.13, .26]	0.49	.11
†*CTPS*	3.06 (0.68)	3.18 (0.75)	-0.12 [-.35, .11]	0.31	-.16
†*NRS*	3.64 (0.62)	3.68 (0.71)	-0.04 [-.25, .18]	0.73	-.06
***RSLQ-Total Score**	**3.32 (0.50)**	**3.35 (0.57)**	**-0.03 [-.20, .14]**	**0.72**	-.06

Note: $p \leq 0.05$; *n = 153 BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; †Self-Leadership Dimension; ‡DM: Difference in Means; ¶Confidence Interval

Self-leadership and years practicing as an ANP

Independent samples *t*-tests were performed to determine whether the number of years practicing as an ANP influenced self-leadership (Table 39). The assumption of equality of variances was not violated, and so independent-samples *t*-tests were conducted assuming equality of variances. The results of these *t*-tests did not indicate significant mean differences except in the case of natural reward strategies. For natural reward strategies, ANPs practicing more than 3 years were found to have significantly higher scores compared to ANPs practicing less than or equal to 3 years. The standardised difference between two means was determined

by calculating Cohen's *d* with the values found indicating a trivial or small effect size with respect to the variables included. A total of 4 analyses were performed in each independent samples t-test resulting in a more restrictive alpha value of 0.01 (0.05/4). The application of a Bonferroni adjustment influenced the significance judgement for natural reward strategies but did not influence the significance judgement of the remaining Independent-samples *t*-tests.

Table 44: Independent-samples t-test results for overall RSLQ and dimensions by years practicing as an ANP (n = 153)

Scales/Dimensions	≤3 years (n = 76)	>3years (n = 77)	DM‡ [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
†*BFS*	3.32 (0.58)	3.29 (0.63)	.02 [-.17, .21]	0.82	.05
†*CTPS*	3.06 (0.66)	3.18 (0.77)	-.12 [-.35, .11]	0.30	.17
†*NRS*	3.54 (0.64)	3.77 (0.68)	-.22 [-.44, -.02]	**0.03**	.35
***Total RSLQ**	**3.28 (0.49)**	**3.39 (0.57)**	**-.11 [-.28, .06]**	**0.20**	**.21**

Note: *p ≤0.05; n = 153 BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; †Self-Leadership Dimension; ‡DM: Difference in Means; ¶Confidence Interval

Self-Leadership and years in current position

To determine if years in current position influenced ANPs' self-leadership skills, behaviours, and cognitions, Analysis of Variance (ANOVA) tests were conducted (Table 40). A total of 4 analyses were performed in each Analysis of variance test resulting in a more restrictive p value of 0.01 (0.05/4) when a Bonferroni correction is performed. The Brown-Forsythe test was used to test the assumption of equal variances and was found to be statistically significant for all variables except for the constructive thought patterns dimension. A one-way ANOVA was conducted for the constructive thought patterns variable, and a significant difference was not found between the groups ($p = 0.14$). For each of the other variables, a Welch's ANOVA was performed, and all were statistically significant ($p = 0.004$ for behaviour focused strategies, $p = 0.001$ for natural reward strategies and $p = 0.004$ for overall self-leadership) indicating that

number of years spent in current position was associated with the behaviour focused strategies and natural reward strategies dimensions and overall self-leadership.

Post-hoc pairwise comparisons were performed using the Games-Howell test because the assumption of the equality of variances was violated, and the Games-Howell test does not assume the equality of variances. Regarding behaviour focused strategies, respondents with 3-4 years in their current position had significantly higher scores than those with 5-9 years' experience (Difference in Means =.61, 95% CI: [.17, 1.03], p = 0.002) and those with 10 or more years' experience (Difference in Means = .45, 95% CI: [.18, 1.03], p = 0.002).

For natural reward strategies, ANPs practicing in their current position for 3-4 years had significantly higher scores than those practicing less than three years (Difference in Means = .53, 95% CI: [.18, .88], p = 0.001) and those practicing 5-9 years (Difference in Means = .59, 95% CI: [.16, 1.02], p = 0.003). Similarly, for overall self-leadership, ANPs practicing 3-4 years in their current position had significantly higher scores than those practicing less than three years (Difference in Means = .41, 95% CI: [.08, .74], p = 0.01) and those practicing 5-9 years (Difference in Means =.53, 95% CI: [.15, .90]), p = 0.002). To measure the effect sizes in the ANOVA models the η squared was calculated. Small effect sizes were found in all cases.

The application of a Bonferroni corrected alpha did not influence the significance judgement of the ANOVAs conducted to determine if years in current position influenced ANPs' self-leadership skills, behaviours, and cognitions.

Table 45: Analysis of variance (ANOVA) overall RSLQ and dimensions among ANPs by years in current position (n = 153)

Scales	Mean (SD)				ANOVA (p)	η^2	*p*-value for Post-Hoc Comparison Using GH[c, d]		
	<3yrs (n=64)	3-4yrs (n=27)	5-9yrs (n=28)	≥10yrs (n=33)			< 3yrs vs. 3-4yrs	3-4yrs vs. 5-9yrs	3-4yrs vs. ≥10yrs
†*BFS*	3.31 (0.56)	3.64 (0.64)	3.04 (0.55)	3.20 (0.58)	0.004[a]	.10		0.002	0.03
†*CTPS*	3.02 (0.63)	3.43 (0.92)	2.98 (0.58)	3.18 (0.76)	0.14[b]	.05			
†*NRS*	3.54 (0.61)	4.07 (0.55)	3.48 (0.65)	3.70 (0.74)	0.001[a]	.10	0.001	0.003	
***Total RSLQ**	**3.27 (0.46)**	**3.68 (0.57)**	**3.15 (0.45)**	**3.34 (0.61)**	**0.004[a]**	**.10**	**0.01**	**0.002**	

Note: *$p \leq 0.05$; $n = 153$ [a]*Welch ANOVA (BFS, NRS, Total RSLQ)* [b]*One-way ANOVA (CTPS), BFS:* Behaviour Focused Strategies Dimension; CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies * Total Self-Leadership [†]Self-Leadership Dimension DM: Difference in Means. [c]Games-Howell (GH) test. [d]Only statistically significant pairwise comparisons are reported

Self-Leadership and Working Alone

Independent samples *t*-tests were conducted to compare the means of the total RSLQ and its dimensions based on whether ANPs worked less than half or at least half of their shifts as a lone practitioner (Table 41). Levene's test for assumption of equality of variances was not violated for any variables, and so independent-samples *t*-tests were conducted assuming equality of variances. No statistically significant relationships were found between the self-leadership variables and percentage of shifts worked as a lone practitioner. Effect size was measured using Cohen's *d*, with trivial effect sizes found. A total of 4 analyses were performed in each independent samples t-test resulting in a Bonferroni-adjusted alpha value of 0.01 (0.05/4). Changing the significance threshold did not influence the significance judgement of the Independent samples *t*-tests were conducted to compare the means of the total RSLQ and its dimensions based on whether ANPs worked less than half or at least half of their shifts as a lone practitioner

Table 46: Independent-samples t-test results for overall RSLQ and dimensions by percentage of shift working alone (n = 153)

Scales/Dimensions	< 50% (n = 47)	≥ 50% (n = 106)	DM[‡] [95% CI ¶]	*p*	Cohen's *d*
	M (SD)	M (SD)			
[†]*BFS*	3.27 (.60)	3.32 (.61)	-.04 [-.26, .17]	0.67	.08
[†]*CTPS*	3.10 (.64)	3.13 (.75)	-.04 [-.29, .21]	0.77	.04
[†]*NRS*[c]	3.70 (.65)	3.64 (.68)	.06 [-.18, .29]	0.64	.09
***Total RSLQ**	**3.33 (.52)**	**3.34 (.55)**	**.00 [-.19, .18]**	**0.99**	**.02**

Note: $p \leq 0.05$; $n = 153$ *BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies; *Total Self-Leadership; [†]Self-Leadership Dimension; [‡]DM: Difference in Means; [¶]Confidence Interval

Self-Leadership and psychosocial factors

This section examines the relationships between self-leadership (overall), its three dimensions (behaviour focused strategies, constructive thought pattern strategies and natural reward strategies) and the three COPSOQ III scales: Commitment to the Workplace, Work Engagement, Influence at Work using Pearson's correlation coefficients. All tests were carried out against a Bonferroni-adjusted alpha level of 0.01 (0.05/4) (Table 42).

In relation to the dimension of behaviour focused strategies, a statistically significant correlation was found with Work Engagement which was moderate in strength (r = .395, p < .01, n = 153). Therefore, ANPs who reported higher levels of Work Engagement were more likely to report increased behaviour focused strategies.

Regarding constructive thought pattern strategies, a significant correlation was found with Work Engagement (r = .361, p < .01, n = 153). This correlation was positive and moderate in strength. These findings indicated that ANPs who reported higher increased Work Engagement also reported increased constructive thought pattern strategies.

Statistically significant correlations were found between natural reward strategies and Commitment to the Workplace (r = .210, p < .01, n = 153) and Work Engagement (r = .444, p < .01, n = 153). These correlations were found to be positive and were weak or moderate in strength. This indicates that ANPs who reported increased levels of Commitment to the Workplace and Work Engagement also used natural reward strategies to accomplish a positive focus on rewarding elements of tasks.

For the overall construct of self-leadership, a moderate and significant correlation was found with Work Engagement, (r = .495, p < .01, n = 153). The application of a Bonferroni adjustment Bonferroni adjustment influenced the significance judgement for the relationship between overall self-leadership and Commitment to the Workplace but did not influence the significance judgement of the remaining correlations. Therefore, ANPs who reported higher levels of Work Engagement were more likely to report increased self-leadership scores.

Table 47: Pearson's Correlations between for overall RSLQ and dimensions and COPSOQ Scales (n = 153)

	CW	WE	IN
BFS	.153	.395**	.149
CTPS	.047	.361**	.018
NRS	.210**	.444**	.015
Total RSLQ	**.166***	**.495****	**.059**

* Correlation is statistically significant at .05 level. ** Correlation is statistically significant at the .01 level CW: Commitment to the Workplace, WE: Work Engagement, IN: Influence at Work, *BFS:* Behaviour Focused Strategies Dimension, CTPS: Constructive Thought Pattern Strategies Dimension; NRS: Natural Reward Strategies

Job Satisfaction and relationships with demographic variables

To understand the relationship between job satisfaction and the demographic variables measured in this study, the frequency counts for gender, age, years practicing, years in current position and percentage of shifts working alone were tabulated, with post hoc tests used. This was achieved by adding BPROP (Bonferroni Proportions) to the cells subcommand in the existing syntax. These frequencies are presented in Table 43. The chi-square independence test did not find a significant association between job satisfaction and gender (χ^2 (1, N = 153) = 0.054, p = 0.782), age (χ^2 (3, N = 154) = 3.95, p = .267), years practicing as an ANP (χ^2 (4, N = 152) = 4.54, p = .338), years in current position , (χ^2 (3, N = 153) = 1.78, p = .619), or the percentage of shifts working as a lone practitioner χ^2 (1, N = 154) = 2.08, p = .149. These results are identical to those found prior to Bonferroni adjustment.

Table 48: Association between Job Satisfaction, demographic variables and types of shift worked

	Satisfied	Dissatisfied	p[a]
	N (%)	N (%)	
Gender (n=153)			0.81
Male	22 (81.5)	5 (18.5)	
Female	105 (83.3)	21 (16.7)	
Age (n=154)			0.95
25-44 Years	60 (83.3)	12(16.7)	
45-64 Years	68 (83.0)	14 (17.0)	
Years Practicing (n=152)			0.39
≤ 3Years	61 (80.3)	15 (19.7)	
≥ 3Years	65 (84.4)	11 (15.6)	
Years in Current Position (n=153)			0.47
≤ 5 Years	78 (84.8)	14 (15.2)	
≥ 10 Years	49 (80.3)	12 (19.7)	
% of Shifts Working Alone (n=154)			0.15
Less than 50%	43 (89.6)	5 (10.4)	
More than 50%	85(80.2)	21(19.8)	

[a]P value reflects the difference between the characteristics of the sample based on job satisfaction

Intention to leave and relationships with demographic variables

An examination of the association between intention to leave and the sample of found a difference that was not statistically significant based for gender, (χ^2 (1, N = 154) = 1.14, p = .285), age (χ^2 (3, N = 154) = 2.74, p = .434), years practicing as an ANP (χ^2 (4, N = 152) = 5.90, p = .207), years in current position (χ^2 (3, N = 153) = 1.84, p = .606), or the percentage of shifts ANPs worked as a lone practitioner (χ^2 (1, N = 154)= 1.49, p = .222). These results suggest that these variables were not a significant indicator for intention to leave among the ANPs in this study (Table 44).

Table 49: Association between Intention to Leave, demographic variables and types of shifts worked

	Yes	No	p[a]
	N (%)	N (%)	
Gender (n=153)			0.29
Male	11 (40.7)	16 (59.3)	
Female	38 (30.2)	88 (69.8)	
Age (n=154)			0.98
25-44 Years	23 (1.9)	49 (7.1)	
45-64 Years	26 (13.0)	56 (24.7)	
Years Practicing (n=152)			0.60
≤ 3Years	25 (32.9)	51 (67.1)	
≥ 3Years	22 (28.9)	54 (71.1)	
Years in Current Position (n=153)			0.60
≤ 5 Years	28 (30.4)	64 (69.6)	
≥ 10 Years	21 (34.4)	40 (65.6)	
% of Shifts Working Alone (n=154)			0.22
≤ 50%	12 (25.0)	36 (75.0)	
≥ 50%	37 (34.9)	69 (65.1)	
≤			

[a]p value reflects the difference between the characteristics of the sample based on intention to leave

Conclusion

Applying Bonferroni correction is a complicated issue, whose application lacks consistency and consensus within the statistical literature on how and even if it should be used. Indiscriminate application may result in the loss of statically significant effects which affect the findings. In this study, in line with received statistical advice, a Bonferroni adjustment was not applied to the data in the main study, however for completeness this appendix uses Bonferroni correction to address the family wise error rate, by adjusting the *p*-values corresponding to each statistical test.

Appendix 12: Syntax File

Section A: Descriptive Analyses

Table 17: Sociodemographic and Professional Profile of Respondents (n = 153)

```
FREQUENCIES VARIABLES=Q2_Towhichgenderdoyoumostidentify Age_Dichotomous
Years_Practicing_Dichotomous
   Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition Dichotomous_Shifts
 /ORDER=ANALYSIS.
```

Table 18: Descriptive Statistics for RSQL Dimensions n=153

```
DESCRIPTIVES VARIABLES=SELF_LEADERSHIP_TOTAL_MEAN
BFS_Total_Mean CTPS_Total_Mean NRS_Mean_Total
 /STATISTICS=MEAN STDDEV MIN MAX.
```

Table 19: Descriptive Statistics for COPSOQ Scales n=153

```
DESCRIPTIVES VARIABLES=Influence_at_work Commitment_to_the_Workplace
Work_Engagement
 /STATISTICS=MEAN STDDEV MIN MAX.
```

Section B: Univariable Analyses

Table 20: Independent-samples t-test results for overall RSQL and dimensions by respondent gender (n=152)

```
T-TEST GROUPS=Q2_Towhichgenderdoyoumostidentify(0 1)
/MISSING=ANALYSIS
/VARIABLES= BFS_Total_Mean CTPS_Total_Mean NRS_Mean_Total
SELF_LEADERSHIP_TOTAL_MEAN
/ES DISPLAY(TRUE)
/CRITERIA=CI(.95).
```

Table 21: Independent-samples t-test results for overall RSQL and dimensions by respondent age (n=153)

```
T-TEST GROUPS=Age_Dichotomous(0 1)
/MISSING=ANALYSIS
/VARIABLES= BFS_Total_Mean CTPS_Total_Mean NRS_Mean_Total
SELF_LEADERSHIP_TOTAL_MEAN
/ES DISPLAY(TRUE)
/CRITERIA=CI(.95).
```

Table 22: Independent-samples t-test results RSQL by years practicing as an ANP (n=153)

```
T-TEST GROUPS=Years_Practicing_Dichotomous(0 1)
/MISSING=ANALYSIS
/VARIABLES= BFS_Total_Mean CTPS_Total_Mean NRS_Mean_Total
SELF_LEADERSHIP_TOTAL_MEAN
/ES DISPLAY(TRUE)
/CRITERIA=CI(.95).
```

Table 23: Analysis of variance (ANOVA) overall RSQL and dimensions among ANPs by years in current position

```
ONEWAY BFS_Total_Mean CTPS_Total_Mean NRS_Mean_Total
SELF_LEADERSHIP_TOTAL_MEAN BY
Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition
/STATISTICS DESCRIPTIVES HOMOGENEITY BROWNFORSYTHE WELCH
/MISSING ANALYSIS
/POSTHOC=TUKEY GH ALPHA(0.05).
```

Table 24: Independent-samples t-test results RSQL by percentage of shift working alone (n=153)

```
T-TEST GROUPS=Dichotomous_Shifts(0 1)
/MISSING=ANALYSIS
/VARIABLES=BFS_Total_Mean CTPS_Total_Mean NRS_Mean_Total
SELF_LEADERSHIP_TOTAL_MEAN
/ES DISPLAY(TRUE)
/CRITERIA=CI(.95).
```

Table 25: Pearson's Correlations between for overall RSQL and dimensions and COPSOQ Scales (n=153)

BFS	CORRELATIONS /VARIABLES= BFS_Total_Mean Commitment_to_the_Workplace Work_Engagement Influence_at_work /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
CTPS	CORRELATIONS /VARIABLES= CTPS_Total_Mean Commitment_to_the_Workplace Work_Engagement Influence_at_work /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
NRS	/VARIABLES= NRS_Mean_Total Commitment_to_the_Workplace Work_Engagement Influence_at_work /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
SL	CORRELATIONS /VARIABLES= SELF_LEADERSHIP_TOTAL_MEAN Commitment_to_the_Workplace Work_Engagement Influence_at_work

Note: SL: Overall Self-Leadership, BFS: Behaviour Focused Strategies, CTPS: Constructive thought pattern strategies, NRS: Natural Reward Strategies

Section C: Multivariable Analyses

Table 26: Multiple linear regression with work engagement, gender and years in current position included as independent variables for behaviour focused strategies

```
REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT BFS_Total_Mean
/METHOD=ENTER Work_Engagement Q2_Towhichgenderdoyoumostidentify
CP_3_to_4 CP_5_to_9 CP_10_or_more Age_Dichotomous
Years_Practicing_Dichotomous
/PARTIALPLOT ALL
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
/CASEWISE PLOT(ZRESID) OUTLIERS(3).
```

```
UNIANOVA BFS_Total_Mean BY Q2_Towhichgenderdoyoumostidentify
   Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition Age_Dichotomous
Years_Practicing_Dichotomous
   WITH Work_Engagement
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Work_Engagement Q2_Towhichgenderdoyoumostidentify
   Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition Age_Dichotomous
Years_Practicing_Dichotomous.
```

Table 27: Multiple linear regression with work engagement, and years in current position included as independent variables for constructive thought pattern strategies

```
REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT CTPS_Total_Mean
/METHOD=ENTER Work_Engagement CP_3_to_4 CP_5_to_9 CP_10_or_more
Age_Dichotomous Years_Practicing_Dichotomous
/PARTIALPLOT ALL
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
/CASEWISE PLOT(ZRESID) OUTLIERS(3).
```

```
UNIANOVA CTPS_Total_Mean BY
Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition Age_Dichotomous
Years_Practicing_Dichotomous
   WITH Work_Engagement
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Work_Engagement
Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition Age_Dichotomous
Years_Practicing_Dichotomous.
```

Table 28: Multiple linear regression with work engagement, years practicing and years in current position included as independent variables for natural reward strategies

```
REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT NRS_Mean_Total
/METHOD=ENTER Work_Engagement Commitment_to_the_Workplace
Years_Practicing_Dichotomous, CP_3_to_4 CP_5_to_9 CP_10_or_more
Age_Dichotomous
/PARTIALPLOT ALL
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
/CASEWISE PLOT(ZRESID) OUTLIERS(3).
```

```
UNIANOVA NRS_Mean_Total BY Years_Practicing_Dichotomous
Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition Age_Dichotomous
   WITH Work_Engagement Commitment_to_the_Workplace
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Work_Engagement Commitment_to_the_Workplace
Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition Age_Dichotomous
Years_Practicing_Dichotomous.
```

Regression to determine the unique contribution of years in current position

```
  REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT NRS_Mean_Total
/METHOD=ENTER Work_Engagement Commitment_to_the_Workplace
Years_Practicing_Dichotomous, Age_Dichotomous
/PARTIALPLOT ALL
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
/CASEWISE PLOT(ZRESID) OUTLIERS(3).
```

Table 29: Multiple linear regression with work engagement, comittment to the workplace, years practicing and years in current position included as independent variables for overall self-leadership

```
REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT SELF_LEADERSHIP_TOTAL_MEAN
/METHOD=ENTER Work_Engagement Commitment_to_the_Workplace
Years_Practicing_Dichotomous, CP_3_to_4 CP_5_to_9 CP_10_or_more
Age_Dichotomous
/PARTIALPLOT ALL
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
/CASEWISE PLOT(ZRESID) OUTLIERS(3).
```

```
UNIANOVA SELF_LEADERSHIP_TOTAL_MEAN BY Years_Practicing_Dichotomous
   Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition Age_Dichotomous
   WITH Work_Engagement Commitment_to_the_Workplace
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Work_Engagement Commitment_to_the_Workplace
Q5_Abouthowmanyyearshaveyoubeeninyourcurrentposition Age_Dichotomous
Years_Practicing_Dichotomous.
```

Regression to determine the unique contribution of years in current position

```
  REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT SELF_LEADERSHIP_TOTAL_MEAN
/METHOD=ENTER Work_Engagement Commitment_to_the_Workplace
Years_Practicing_Dichotomous, Age_Dichotomous
/PARTIALPLOT ALL
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
/CASEWISE PLOT(ZRESID) OUTLIERS(3).
```

Section D: Job Satisfaction and Intention to Leave

Table 30: Relationship between Job Satisfaction, demographic variables and percentage of shifts worked as a lone practitioner

Gender	CROSSTABS /TABLES=JS_Split BY Q2_Towhichgenderdoyoumostidentify /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL.
Age	CROSSTABS /TABLES=JS_Split BY Age_Dichotomous /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL.
Years Practicing	CROSSTABS /TABLES=JS_Split BY Years_current_position /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL.
Years in current position	DATASET ACTIVATE DataSet1. CROSSTABS /TABLES=JS_Split BY Years_current_position /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT COLUMN /COUNT ROUND CELL /METHOD=EXACT TIMER(5).
% of shifts working alone	CROSSTABS /TABLES=JS_Split BY Dichotomous_Shifts /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL.

Table 31: Independent-samples t-test results RSQL by job satisfaction (n=153)

```
T-TEST GROUPS=JS_Split (0 1)
/MISSING=ANALYSIS
/VARIABLES=BFS_Total_Mean CTPS_Total_Mean NRS_Mean_Total
SELF_LEADERSHIP_TOTAL_MEAN
/ES DISPLAY(TRUE)
/CRITERIA=CI(.95).
```

Table 32: Relationship between Intention to Leave, demographic variables and types of shifts worked

Gender	CROSSTABS /TABLES=Q57_Ifpossiblewouldyouleaveyourcurrentjobwithinthenextyearasares BY Q2_Towhichgenderdoyoumostidentify /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL.
Age	CROSSTABS /TABLES=Q57_Ifpossiblewouldyouleaveyourcurrentjobwithinthenextyearasares BY Age_Dichotomous /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL.
Years Practicing	CROSSTABS /TABLES=Q57_Ifpossiblewouldyouleaveyourcurrentjobwithinthenextyearasares BY Years_Practicing_Dichotomous /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL.
Years in current position	CROSSTABS /TABLES=Q57_Ifpossiblewouldyouleaveyourcurrentjobwithinthenextyearasares BY Years_current_position /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT COLUMN /COUNT ROUND CELL /METHOD=EXACT TIMER(5).
% of shifts working alone	CROSSTABS /TABLES=Q57_Ifpossiblewouldyouleaveyourcurrentjobwithinthenextyearasares BY Dichotomous_Shifts /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL.

Table 33: Independent-samples t-test results RSQL by intention to leave (n=153)

```
T-TEST
GROUPS=Q57_Ifpossiblewouldyouleaveyourcurrentjobwithinthenextyearasares(0 1)
/MISSING=ANALYSIS
/VARIABLES=BFS_Total_Mean CTPS_Total_Mean NRS_Mean_Total
SELF_LEADERSHIP_TOTAL_MEAN
/ES DISPLAY(TRUE)
/CRITERIA=CI(.95).
```

Table 34: Relationship between Job Satisfaction and intention to leave

```
CROSSTABS
  /TABLES=JS_Split                                                    BY
Q57_Ifpossiblewouldyouleaveyourcurrentjobwithinthenextyearasares
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL
  /METHOD=EXACT TIMER(5).
```

Appendix 13: Summary Statistics for RSQL individual items

These results are presented firstly in relation to the individual items (see appendix for individual item scores) and next in relation to the mean sub-scale scores, to add context in relation to the self-leadership dimensions that presented in chapter 4. The mean item scores in Table 4.2 are based on a scale of 1 to 5 (not at all accurate to completely accurate) indicating how true each statement was in describing the respondent.

The highest mean scores related to the self-observation and natural reward subscales. In the self-observation sub-scale, the highest rated items were 'I pay attention to how well I'm doing in my work' (M = 4.07, SD = 0.86) and 'I usually am aware of how well I'm doing as I perform an activity', (M = 3.81, SD = 0.83). In relation to self-goal setting respondents reported high mean scores for 'I establish specific goals for my own performance' (M = 3.87, SD = 0.98) and 'I work toward specific goals I have set for myself' (M = 3.76 , SD = 0.97). In the natural reward sub-scale, the highest rated item was 'when I have a choice, I try to my work in ways that I enjoy rather than just trying to get it over with' (M = 3.92, SD = 0.90). The lowest mean scores related to the self-punishment sub-scale where the lowest scored item was 'I feel guilt when I perform a task poorly' (M = 2.13, SD = 1.13). There were similarly low scores in the self-reward subscale with 'When I do something well, I reward myself with a special event such as a good dinner, movie, shopping trip, etc (M = 2.28, SD = 1.18).

Table 50: RSLQ Mean and Standard Deviation for subscales and individual items

Self-Leadership /Items	Mean*	SD	*N*
†Behaviour focused strategies	**3.30**	**0.61**	
‡**Self-Goal Setting**	**3.59**	**0.84**	
I establish specific goals for my own performance	3.87	0.98	153
I consciously have goals in mind for my work efforts	3.65	1.11	153
I work toward specific goals I have set for myself.	3.76	0.97	153
I think about the goals that I intend to achieve in the future	3.72	1.06	152
I write specific goals for my own performance	2.94	1.32	152
‡**Self-Reward**	**2.50**	**1.12**	
When I do an assignment especially well, I like to treat myself to some thing or activity I especially enjoy	2.75	1.31	153
When I do something well, I reward myself with a special event such as a good dinner, movie, shopping trip, etc	2.28	1.18	153
When I have successfully completed a task, I often reward myself with something I like	2.45	1.24	152
‡**Self-Punishment`*(reverse scored)**	**2.48**	**0.98**	
I tend to get down on myself in my mind when I have performed poorly	2.61	1.25	152
I tend to be tough on myself in my thinking when I have not done well on a task	2.30	1.21	153
I feel guilt when I perform a task poorly	2.13	1.13	152
I sometimes openly express displeasure with myself when I have not done well	2.89	1.25	152
‡**Self-Observation**	**3.71**	**0.73**	
I make a point to keep track of how well I'm doing at work	3.24	1.32	153
I usually am aware of how well I'm doing as I perform an activity	3.81	0.83	153
I pay attention to how well I'm doing in my work	4.07	0.86	153
I keep track of my progress on projects I'm working on	3.74	0.99	151
‡**Self-Cueing**	**3.54**	**1.17**	
I use written notes to remind myself of what I need to accomplish.	3.38	1.34	152
I use concrete reminders (e.g., notes and lists) to help me focus on things I need to accomplish	3.71	1.21	153

*Reverse Scoring Note: Individual item scores range from 1-5, BFS range 18-90, CTPS 12-60, NRS range 5-25. Low scores indicate that the statements were not accurate in describing the respondent, higher scores indicate that the statements were more accurate in describing respondents. † Self-Leadership Dimension ‡Self-Leadership Subscale

Continued Table 41: RSLQ Mean and Standard Deviation for subscales and individual items

Self-Leadership /Items	Mean	SD	*n*
†Constructive Thought Pattern Strategies	**3.12**	**0.72**	
‡**Self-Talk**	**3.14**	**1.07**	
Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face	3.03	1.27	153
Sometimes I talk to myself (out loud or in my head) to work through difficult situations.	3.27	1.18	153
When I'm in difficult situations I will sometimes talk to myself (out loud or in my head) to help me get through it	3.11	1.17	152
‡**Evaluating Beliefs and Assumptions**	**3.22**	**0.75**	
I think about my own beliefs and assumptions whenever I encounter a difficult situation.	3.39	1.00	152
I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with	3.05	1.16	153
I openly articulate and evaluate my own assumptions when I have a disagreement with someone else.	3.24	1.08	153
I think about and evaluate the beliefs and assumptions I hold	3.21	1.12	152
‡**Visualising Successful Performance**	**3.01**	**0.91**	
I use my imagination to picture myself performing well on important tasks	2.78	1.27	150
I visualize myself successfully performing a task before I do it	2.87	1.28	153
Sometimes I picture in my mind a successful performance before I actually do a task	2.75	1.19	153
I purposefully visualize myself overcoming the challenges I face	3.11	1.23	151
I often mentally rehearse the way I plan to deal with a challenge before I actually face the challenge	3.53	1.14	151
†Natural Reward Strategies	**3.36**	**0.67**	
‡**Focusing on Natural Rewards**	**3.36**	**0.67**	
I focus my thinking on the pleasant rather than the unpleasant aspects of my job activities	3.59	1.00	153
I try to surround myself with objects and people that bring out my desirable behaviours	3.47	1.12	153
When I have a choice, I try to my work in ways that I enjoy rather than just trying to get it over with.	3.92	0.90	152
I seek out activities in my work that I enjoy doing	3.70	1.06	151
I find my own favourite ways to get things done	3.60	1.07	149

*Reverse Scoring Note: Individual item scores range from 1-5. Low scores indicate that the statements were not accurate in describing the respondent, higher scores indicate that the statements were more accurate in describing respondents. † Self-Leadership Dimension ‡Self-Leadership Subscale

Appendix 14: Correspondence from Professor Houghton



Jeff Houghton · 3:59 PM

Dear Martin,

Thanks for your interest in self-leadership! Your research topic sounds very interesting and you are certainly welcome to use either the Revised Self-Leadership Questionnaire (RSLQ) or the Abbreviated Self-Leadership Questionnaire (ASLQ) in your work. We ask only that you cite our work appropriately and share your results, especially any scale reliability data. I have attached a .pdf file containing a copy of the JMP article (Houghton & Neck, 2002) in which we published the RSLQ and a .pdf file containing a copy of the IJLS article (Houghton et al., 2012) in which we published the ASLQ. I have also attached two MS Word documents containing both scales for your convenience.