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Transition to Clinical Practice

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for the degree of Doctor of Philosophy

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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."

Signed: _____ Date: _____

Dedication

To Brian, William, Christopher, Brian Jnr. and Leah.

Acknowledgements

I would like to express my thanks to my supervisors Dr Deirdre Bennett and Professor Paula O'Leary for their expertise, support, guidance, and insightful feedback throughout this thesis.

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Abstract

Background

According to extensive international research, medical graduates continue to face significant challenges as they transition from student to doctor. Contributory factors include issues with preparedness, support, workplace interactions and challenges to their health and wellbeing. While research to date, in the form of attitudinal information, and common qualitative themes, has afforded us some insight into this formative period, a contemporaneous exploration of the lived experience of transition to practice is lacking. To improve work readiness and ease the transition, focused interventions have been designed and implemented; however an overview of the research activity into these interventions is also lacking. My thesis aims to address these gaps by achieving a deeper understanding and appreciation of the experience of the first year of practice, by exploring the lived experience of anticipation of practice, the experience over the first year and the experience of intra-professional mistreatment. I will also describe the evidence for interventions to support these doctors.

Methodology

For my longitudinal exploration of the lived experience of the transition, I used the contemporary phenomenological approach of interpretative phenomenological analysis (IPA), which aligns with my interpretivist/constructivist worldview.

The methodological frameworks and guidelines of Arksey and O'Malley, Levac and the Joanna Briggs Institute informed my scoping review of the literature into transitional interventions.

Methods

I purposively recruited 14 recent medical graduates. I interviewed them prior to commencing work, regarding their experience of anticipation of practice, and again at the end of their first year with respect to their experience of transition over the year. Each participant recorded audio diaries during the year relating to their experiences. Interviews were recorded, and all data was transcribed verbatim and anonymised. Analysis was carried out using IPA to identify common themes in respect of my research questions. To explore the experience of intra-professional mistreatment during the transition I focused on the data of a subset of three participants.

For my scoping review, I assembled a research team of experts. Using relevant terms, we searched Medline Ovid, Embase, PsycInfo, SocIndex, ERIC and CINAHL databases, handsearched key journals, and tracked citations to identify empirical papers describing the implementation and/or evaluation of interventions designed to address preparedness for practice. Papers were screened by abstract and title and then by full text using inclusion and exclusion criteria. Data was extracted to address the focus of the review.

Results

The experience of anticipation of transition was characterised by the expectation of an abrupt transition, mixed feelings regarding commencing practice and strategic planning in anticipation of the challenges ahead. The hidden curriculum shaped participants' understanding of what was expected of them and inspired dysfunctional strategies to meet these expectations. I identified overlapping stages in the experience over the first year. An initial emotional response, similar to the 'transition shock' described in newly graduated nurses was followed by an increase in confidence, challenges with workload, support and workplace interactions, and a final stage of rationalisation of the challenges encountered during the year. Distressing experiences of victimisation, disrespect and issues securing support from more senior doctors were described, which inspired some maladaptive behaviours. My scoping review revealed a lack of emphasis on real-patient care experiences, on the wellbeing of the graduate, or involvement of allied healthcare professionals, and a lack of standardisation regarding categorisation and terminology used to describe transitional interventions, with low level study design and evaluation.

Discussion

While the abrupt nature of the transition characterised the early experience of commencing work, beyond this, cultural, relational and contextual factors predominated. One way to alleviate the abrupt nature of the transition is to strengthen experience based learning as an undergraduate so that the role of senior medical student approximates that of newly qualified doctor. There is also a need for greater accommodation of the early transition period at organisational level. Deep

cultural change is required to address the hidden curriculum and mitigate its negative effects. Interventions to address bullying and harassment, suboptimal supervision, issues with inter-professional collaboration and increased work intensity are also vital to improve the experience of transition to clinical practice.

My findings have added to the extant knowledge relating to the transition to clinical practice and will inform undergraduate and postgraduate curricula and interventions to support this important period in the lives of medical graduates.

Chapter One

1. Transition to Clinical Practice

1.1 Introduction

Transitions in medical education can be described as dynamic processes of professional discontinuity in the form of changes in 'expectancies, tasks or responsibilities', requiring the student or doctor to develop coping strategies in order to function competently in their new environment (1, 2). A transition is seen as an on-going process, where the individual moves from 'one context and set of interpersonal relationships to another' (3). Successful navigation of a transition can result in personal growth and development, increased confidence and self-esteem, positive coping strategies and learning, independence and job satisfaction, (1, 2, 4). However, difficult transitions can contribute to distress and burnout (1).

It is internationally acknowledged that, although the medical education continuum contains many important transitions, the one from undergraduate education to medical practice is the most challenging (2, 5-7), and is found for many, to be very stressful and anxiety provoking (8, 9). How new graduates experience the transition, can affect their personal growth (10), their developing professional identity (11), and their mental health and wellbeing (12). These issues are not confined to the initial transition period but can be persistent and often begin with a perception of being poorly prepared for practice (6, 9, 13).

In this chapter, I begin by highlighting the negative impact that the early years of training, and specifically, the transition to clinical practice have on the health and wellbeing of doctors. Following this, as my interest lies in the experience of the transition, I outline how this has been explored to date in the qualitative literature and the resulting themes that have been identified. I discuss these themes in more detail: role and responsibility, preparedness, support, workplace relationships, and other stressors. I outline how transitions in medicine are conceptualised. As this study is situated in Ireland, this context is described separately. I then discuss my intention to add to the prevailing knowledge by providing an interpretative account of how individual doctors make sense of their experience of the transition to clinical practice, and by conducting a scoping review of the literature of interventions that support the transition from student to doctor. The insights gleaned from this research may inform undergraduate and postgraduate curricular design and the implementation of appropriate interventions to support this important transition. Throughout this thesis I will refer to doctors-in-training as 'residents'.

1.2 Health and wellbeing

Although the transition to clinical practice has been the focus of much research in the literature, it continues to be problematic (14), as is evident from an exploration of the health and wellbeing of newly qualified doctors. Across the developed world, residents are known to experience high levels of stress (15-19), burnout (20-31), anxiety (32), and depression or depressive symptoms (32, 33), and these symptoms are particularly common during the transition from medical student to doctor (4, 6, 12-14, 17, 34-42). In the U.S.A. the prevalence of depression among residents has

been recorded as twice that of the general population (22) and suicide is the first and second leading cause of death among male and female residents respectively, especially earlier in training (43). Young doctors in Australia have higher rates of distress and burnout than older doctors, and higher rates of psychological distress and suicidal ideation than the general population (17, 44). Satterfield et al found that the emotions most commonly reported during the first year of practice included guilt, anxiety, fear, upset and anger (38).

There also appears to be a connection between medical graduates commencing clinical practice, and a subsequent deterioration in their health and wellbeing. The prevalence of depression rises during the first year of practice, as do psychiatric morbidity and burnout (33, 41, 45-48). Within one year of graduation, doctors' mental health problems are highest (49) and a progressive rise in burnout, fatigue and apathy, in addition to self-perceptions of empathy erosion and ethical decline have been reported over the course of the year, further highlighting the deleterious effects of the transition (23, 38, 46, 50-54). Suicidal ideation was shown to increase by 370% in a study of U.S. doctors over the first 3 months of training (45). Mood variation in a cohort of residents during the first year of practice, explored by Bellini et al, demonstrated that high levels of vigour, energy and empathy, in excess of a comparable group of college graduates at the beginning of the year, were replaced by an increase in anger, hostility, fatigue, personal distress, inertia and depression (51). The impact of the stress that doctors experience in their first year of practice, is also evident on a biological level, with research demonstrating significant shortening of telomere length, indicating accelerated cellular aging over the course of the first year (55).

The rise in depressive symptoms over the first postgraduate year is apparent across specialties and countries, implying that the underlying causes are common to the residency experience (33). Additionally, a number of studies indicate that newly qualified doctors' expectations do not match their experience on commencing work. Over the course of the first year of practice in the U.S., doctors have reported struggling with their reasons for going into medicine, with feelings of disillusionment (38), and low satisfaction with their lifestyle (16, 30, 56, 57), with surgical residents commonly reporting thoughts of giving up surgery (53). Likewise in the U.K., doctors' desire to practice medicine has been shown to fall in the first year of training (58). Almost half of residents in one Australian survey reported that working as a doctor was not what they expected and almost 20% would not study medicine if they could go back (18). A significant number of Canadian residents when surveyed would change specialties and many would not have pursued medicine as a career in retrospect (15).

These issues with the health and wellbeing of doctors in their first year of practice clearly suggest that the challenges they encounter may be too great. An understanding of how newly qualified doctors experience the transition would inform medical education curricula and facilitate targeted interventions to mitigate the adverse outcomes to medical graduates' health and wellbeing.

1.3 The experience of transition

Much of the published qualitative research on the experience of the transition to practice is cross-sectional in design, where the opinions and experiences of the participants are sought at a point in time, or the participants are asked to look back

and recall their experiences in retrospect with data derived from interviews, focus or support groups, or written material. The opinions of doctors during their first year have been elicited via focus groups, regarding what they felt had gone well, problems they encountered and their suggestions to ease the transition (59). First year doctors have been asked to describe life as a doctor, and have been interviewed regarding their attitudes with respect to preparedness and resilience (60). A description of the early transition period was obtained by Lempp et al via interviews with 16 residents, 2-4 months after starting work, regarding their expectations, the reality encountered, and perceptions of preparedness for the transition (4).

Doctors' developing professional identities during the transition to practice has also been a focus of research (11, 61, 62). Ackerman et al analysed participants' memorable events (a high point, low point or a conflict) and produced a conceptual framework to guide the development of residents' professional identities (11). An explanatory framework for the socio-cultural phenomenon of the first year of practice resulted from a study carried out by Bearman et al, where doctors who had completed their first year were asked to reflect on various stages of their professional development from prior to medical school to the completion of their intern year (61). Other studies have explored the transition by seeking doctors' perceptions of stressors (36, 63), or difficulties encountered (14). Factors affecting work related wellbeing (64) and the trajectory of wellbeing during the first year, in the context of challenges, supports and adaptations over time, have also been explored (50). A further paper by Lempp et al studied the experiences of doctors in the first 3 months following graduation in relation to teamwork, support and shared responsibility (65). Quality of supervision and educational support was also explored by Brown et al

who used a multi-method approach with surveys, focus groups and interviews of first year doctors and their supervisors (66).

A smaller number of studies have employed a longitudinal approach to data collection. Studies that are longitudinal in nature have the advantage of gaining the information as it is happening and allowing a more accurate representation of events or experiences over time. Levine et al prospectively explored processes that related to personal growth during the year, by emailing an open question every two months over the course of the year (10). Each question was highly focused, for example, participants were asked to describe 2-3 major stressors encountered and coping strategies employed by the participant, or to describe an important relationship in the participant's life and how working had affected that relationship. This resulted in a conceptual model to describe personal growth processes and their triggers, facilitators and barriers (10). A conceptual model was also developed by Martin et al to describe the first 6 months of family medicine residency in terms of, concerns, challenges and changes that occurred (67). Support groups over the course of two years were analysed by Satterfield et al to explore challenges, stressors and coping related to the transition to practice with the aim of ascertaining early residents' emotional and developmental coping needs to inform appropriate supportive interventions (38).

Interviews with new graduates, capturing their anticipation prior to commencing work, and follow up interviews regarding their experience after their first rotation, were carried out by Illing et al in their multi-method prospective study examining the preparedness of medical graduates from three different medical schools as they made the transition to professional practice (40). In another program of research into preparedness for practice, Monrouxe et al explored the 'preparedness journey' of

graduates, including how preparedness influenced the transition experience of graduates, using interviews and audio diaries (7). Brennan et al sought to gain an understanding of how junior doctors experienced the transition and how well prepared they were by their undergraduate education. Participants were interviewed twice during the year and were also asked to make audio-diary recordings to record their experiences (6).

In summary, much of the qualitative research in this area provides insights into the experience of newly qualified doctors as they commence practice by describing their perspectives on challenges or stressors encountered, or more focused issues such as preparedness, support or resilience. Other studies have yielded conceptual frameworks with respect to areas such as professional identity, personal growth, and internship as a sociocultural phenomenon. These studies all reveal broadly similar qualitative themes; role and responsibility, preparedness, support, workplace relationships, and other stressors.

1.4 Role and responsibility

Reasons that students at the very beginning of their studies give for wishing to pursue medicine as a career include, a desire to help people, gaining respect, indispensability and an interest in science (68). Even before commencing work, new medical graduates have an expectation of what clinical practice will be like, and how they will perform in the clinical setting. They look forward to earning a salary and moving from being a student to their new role (69). Prior expectations are important, if the stress levels within the job are equal to or less than what is expected, commitment is enhanced, if the opposite occurs, this can lead to demoralisation (70).

The expectations of medical students often differ markedly from the realities of clinical practice, and in the early days after graduation, the realisation that clinical practice is not the idealised version they anticipated can cause considerable distress (8). Griffith et al found that doctors in their first year become less idealistic towards patients and the profession throughout the year, with the greatest change within the first 5 months (71).

When a medical graduate assumes their new role they are required to adapt to a major change in orientation, that is, they are expected to move smoothly from being an observer to being an active participant, fulfilling the demands of the workplace, assuming responsibility for patient care, and simultaneously learning from the process. Training and education can suffer in favour of the needs of medical service provision (72). Role ambiguity is a significant stressor for new graduates (73). Because of the hierarchical nature of medicine, some find that their role consists of a high volume of routine administrative work and fewer opportunities to 'practice medicine' (66, 72).

A common theme to emerge when considering how the transition is experienced is the sudden change in responsibility that comes with their new role (50, 59-61, 63, 67). Newly graduated doctors may be overwhelmed coping with this new responsibility, and can feel out of their depth especially while on call (34, 50). They can struggle with the uncertainty of when to call for help and can feel that they should try to manage on their own (59). Their role also involves having to adapt to a change in relationships with other healthcare workers and patients and this can amplify their feelings of uncertainty (59). There is an expectation that the resident will be able to perform in this new environment under pressure and in times of stress and anxiety (5, 74). Patients and staff expect them to do a good job. The residents

themselves also have an expectation that they should be able to cope, and this preconception can add to their distress if they find themselves struggling (4-6). Skills and knowledge that may have seemed irrelevant in medical school are now very important (4). They can face challenges to their self-esteem and self-confidence, worrying about making errors or facing litigation (8) or encounter challenging professional dilemmas which they can find distressing particularly around the time of transition (75). Positive desired outcomes of the transition are increasing competence and confidence, professional growth and identity formation and the development of resilience. Of course, the increase in responsibility that comes with their new role can have a positive effect on the professional development of the residents depending on their preparedness and on the level of support that they receive.

1.5 Preparedness

Monrouxe et al, in exploring various stakeholders' conceptualisations of preparedness for practice, describe preparedness as 'both a long- and short-term venture that include[s] personal readiness as well as knowledge, skills and attitudes'. In the short term, it is necessary for graduates to have a baseline competency in skills and knowledge to enable them to commence work, as well as an awareness of their own limits, with preparedness in the longer term encompassing readiness for a career in medicine, including for the psychological and emotional dimensions of the job (76). It is known that perceptions of preparedness among medical students and newly qualified doctors can influence the ease of the transition process, with those who feel better prepared, having a more positive experience of transition (13). A high level of

perceived clinical skills at the end of medical school has also been positively associated with future job satisfaction (77). Confidence has been cited by first year doctors as one of the main components of their professional identity (11) and preparedness can facilitate professional role identification, which is generally acknowledged to lessen the stress of the forthcoming clinical years (78). Feeling poorly prepared can cause stress and anxiety for residents (4, 14, 34, 79) and can negatively affect wellbeing (50, 64).

Medical schools have an important role to play in ensuring that graduates are prepared for the rigors of medical practice and in supporting new graduates through the transition. This is evident in the extensive research that has been carried out on the subject (7, 40, 80-85). Benbassat et al identified the inconsistency between some aspects of medical training and clinical practice as a significant stressor for residents (8). Although the general trend in quantitative research is that preparedness is improving (86, 87), an appreciable number of recent graduates find themselves asked to perform tasks for which they feel inadequately trained (87). Current research reveals that doctors are often unprepared for those aspects of the job that require prior experiential learning (40, 74). Examples of these areas include dealing with acutely ill patients and emergencies, prescribing, time management and prioritisation of tasks, dealing with paperwork and large volumes of administrative work (4, 14, 59, 60, 74). Other areas of poor preparedness for residents include coping with uncertainty, when to ask for help and handling their emotions (6, 59, 83). Extensive research carried out in the UK found that preparedness varied according to medical school attended suggesting that there may be a curricular link (88). As well as noting some difference between the reported preparedness of graduates of different medical

schools, Morrow found a difference also within schools leading them to conclude that medical school attended is not a simple predictor of preparedness (89).

In addition, Monrouxe et al argue that difficulties in perceived preparedness are often due to organisational factors within the workplace; 'the challenges of a high-volume time pressured workload, often with inadequate levels of staff. Residents may feel prepared for a situation when all goes to plan but unprepared when exposed to high volumes of work which demand high prioritisation and multitasking; or uncertain thresholds (not knowing when to refer to seniors); inadequate team working or when seniors are not easily accessible' (7). Thus, when contemplating preparedness, the context of the workplace should be borne in mind. For example, Nikendei et al assessed final year medical students in the complexity of the clinical context, by using different ward round scenarios. This resulted in a number of deficiencies in their skills being revealed (90). Tallentire et al explored the various influences on the behaviour of doctors in the acute care context to illustrate the complexity of the clinical environment. Challenges encountered by these new doctors included transferring knowledge into practice and discomfort with the prospect of initiating treatment under diagnostic uncertainty. Some were uncertain about their role and were reluctant to ask for help, citing the hierarchical nature of clinical practice (35). Doctors need to be prepared to work in a stressful and hierarchical work place and function well in an atmosphere of complexity and uncertainty, where preparedness is a continually changing process, impacted by workload, time pressures and inconsistent staffing levels (7). Positive workplace factors associated with feelings of preparedness include increased support, feedback and continuity (including adequate staffing and complete teams) for doctors when they start working (91).

1.6 Support

Prior to commencing practice, residents have an expectation that they will receive the supervision and support necessary for continued professional development (69). They recognise the balance between support from colleagues and the development of independent responsibility (61). The support of a team structure with collective responsibility and a sharing of the workload can improve the wellbeing of doctors in their first year of practice and ease the transition (50, 60, 64, 66). If they feel they have support and guidance and are valued as members of the team, they can reflect on difficult or uncertain situations, without support they may feel undervalued and under-recognised (65, 66). Organisational support is also important, including appropriate induction and orientation into the clinical environment. Some organisations build in the expectation that the residents may underperform initially, but, more often, because of the immediacy of patient care requirements, there is a limited time that any allowance can be made for the resident to adapt (92).

1.7 Workplace relationships

When considering the theme of support during the first year of practice, it is necessary to explore workplace relationships. Supportive relationships, teamwork, and a sense of collective responsibility can ease the transition and facilitate learning and professional development (59, 65). Perceived lack of respect in the workplace can be a significant workplace stressor (14). The literature points to the issue of mistreatment in the form of intimidation, bullying and harassment as being endemic in medical training (93). A meta-analysis of 51 studies across multiple specialties and countries was carried out by Fnais et al which revealed that 59.6% of residents

had experienced bullying (93). Karim et als' review of the literature in 2014 found that 45-93% of residents experienced some form of bullying or intimidation (94). These statistics resonate with the high prevalence of mistreatment that has been noted in studies carried out internationally (95-100). Experience of this behaviour seems to be highest among the most junior residents (96, 99) and can be a continuation of behaviour experienced in medical school (101, 102). The main sources include other physicians and nursing staff (103) and there is some evidence to suggest that it may be more common in surgical specialties (98).

1.8 Other stressors

The common themes discussed here, role and responsibility, preparedness, support, and relationships within the workplace are very important factors that may influence the transition experience. Other factors also recognised as stressors for new doctors include; the high demands of the job, a large administrative component, long working hours, fatigue, understaffing and sometimes complex interactions with others in the workplace which can add to the burden of stress of the transition (4, 6, 34, 36, 50, 59, 63). There has been a concerted effort among many healthcare systems to limit the number of hours residents have to work but there is a sense that this may be causing work compression with resulting increased intensity of work during more limited working hours (31). Residents may also have difficulties maintaining a work life balance and can suffer from an imbalance between effort and perceived reward, which can leave them feeling undervalued. Having to work in different locations can be a stressor also, in that it can negatively affect residents' social supports (104).

1.9 Transition theories

In their critical overview of how transitions within medical education are conceptualised, Teunissen and Westerman (2) acknowledge the uncertainty arising during transitions. They note the ambiguity between the negative emotional impact of transitions and the positive opportunities for learning and personal development afforded by them. The transition to clinical practice for newly qualified doctors involves moving from an environment focused exclusively on learning, to one where they must perform, progressing towards more independent practice, and assuming new responsibility while continuing to learn. In this way the transition, they argue, exemplifies the 'clash between to the learning orientation of university education and the performance orientation of workplace training' (5). Kilminster et al reframe the transition as a 'critically intense learning period' where new doctors cope with uncertainty and new responsibility within the complexity and culture of the clinical environment (92, 105). Wijnen-Meijer et al argue that this 'responsibility transition', experienced when a new medical graduate commences clinical practice, has a greater impact than other transitions in medicine on the development of competence from both residents and supervisors' perspectives. This may be due to the feelings of commitment that arise when residents become part of a community of practice, they are motivated to take and are given more responsibility (106). Learning in this way is understood as being socially derived and situated within the work environment. The newly qualified doctor is positioned as a legitimate peripheral participant in a community of practice (107). The community is comprised of a group of individuals whose identity is defined by a shared domain of interest. Members of the comunity engage in joint activities, interactions, and mutual support. The new member participates in the activities of the community, negotiates their role, forms

relationships and accepts the norms established by it (108). Commencing at the periphery, they move more centrally with increasing competence, towards full membership (107).

Transition theories from other settings can inform transitions in medical education. Duchscher explored the initial stage in the professional role adaptation of newly graduated nurses in terms of the 'physical, intellectual, emotional and developmental' changes that new nursing graduates experience, and termed the consequent negative feelings of anxiety, insecurity and inadequacy, 'transition shock' (109). This resonates with theories of organisational entry where 'reality shock' can be experienced if newcomers' expectations of a job do not equate with the reality experienced (110). Duchscher also described a transformative dynamic journey of transition with the new nursing graduate progressing through different stages of 'doing, knowing and being' (111). Similarly Nicholson's theory of work role transition from transitional psychology, describes stages of preparation, encounter, adjustment and stabilisation, mirroring my definition of transition to clinical practice as a dynamic process of change over time (112).

1.10 Irish context

This study was carried out in Ireland, in the Southern Intern Training Network, one of six networks nationally with responsibility for the first year of postgraduate medical training. Each network is linked to a medical school. Undergraduate medical education in Ireland is between 4 and 6 years in duration. Students can enter directly from second level education (high school) or may have a prior degree. Internship is a yearlong period of transition from medical student to fully registered medical

practitioner. It is analogous to the first year of the Foundation Programme (FY1) in the UK and to Postgraduate Year 1 in Australia (PGY1). In countries where there is no provisional registration phase, an intern is equivalent to a first year resident. As interns, doctors rotate through clinical posts, including a minimum of 3 months each in General Medicine and in General Surgery. They work under supervision, and on successful completion of the year can apply for specialist postgraduate training.

Fotrell noted in 2006 that 'Medical Education must prepare medical students for this constantly evolving environment' (113). More recently the Irish Medical Council has acknowledged the challenge facing first year doctors during their transition to practice; they have to 'adapt rapidly to a very busy working environment in a very short space of time working as part of a multi-disciplinary team often under pressure and dealing in a professional and empathic way with patients who have complex clinical and personal issues' (114).

One of the factors that inspired the focus of this thesis was the publication of the 2014 National Trainee Experience Survey by the Irish Medical Council. One of the conclusions reached was that-

"Transitions in professional development will never be easy…. But it is difficult to accept that trainees at the earliest stage of their professional development should face a challenge of the scale and scope described in Your Training Counts 2014"

This comprehensive survey collected the perspectives of 1636 residents on more than 100 questions, providing an overview of postgraduate training in Ireland. Trainee's views on their learning environment were gathered using an adapted form of D-RECT, the Dutch Residency Educational Climate Test. This study revealed that

“the most significant and systemic variation in trainee experience [was] the challenge facing interns [doctors in their first year of practice]”.

Compared with residents at all other stages, doctors in their first year had the poorest views of the clinical learning environment, and of orientation and induction to the workplace. Thirty percent reported that their undergraduate medical education had not prepared them well to commence work. They had the lowest work engagement score, and more frequently reported experiencing challenges to their health and wellbeing and bullying or undermining behaviours. Many residents who reported poor health and wellbeing did not wish to approach support services. Of those who did wish to seek support, 80%, particularly younger residents, did not do so (100). A follow up qualitative study published by the Irish Medical Council revealed that while most first year doctors found the year a rewarding one, challenges with support, work life balance, and administrative burden were reported (115). A more recent report from the Irish Medical Council highlighted that over 40% of residents reported experiencing bullying or harassment. Compared with residents who were not bullied, these residents were more likely to be involved in an adverse event, which has obvious patient safety implications (116).

Other quantitative research carried out in Ireland reveals issues with different aspects of the year, preparedness for practice (117-124), experiences of bullying (42, 117) and high levels of burnout stress and psychological distress (42, 125) including an association reported by O’Connor et al between high levels of burnout and error (126). A survey carried out by Cronin et al explored intention to migrate after the first year of practice. This provided insights into the work experiences and wellbeing of Irish interns including issues with preparedness for practice, training, understaffing and bullying (127).

Additional insights into the challenges faced by first year doctors have been provided by research using qualitative methodologies (119, 128, 129). These studies reveal poor preparedness for certain aspects of clinical practice such as negotiating workplace relationships, and establishing support networks.

1.11 Focus of thesis

The extant literature has provided us with attitudinal information at population level, and qualitative research has added the voiced experience of doctors, regarding the experience of transition to practice. The majority of qualitative studies exploring the transition use thematic analysis of collected data or grounded theory as a methodological approach. While common themes and theoretical frameworks provide us with some insight into the experience of the resident, if we wish to address the persisting challenges faced, an understanding of how each participant interprets their experience is necessary. What is missing thus far is a more nuanced, in-depth exploration of the lived experience of transition. I propose that this methodological gap could be addressed by using a phenomenological approach. In addition, few studies have been conducted in 'real time', collecting data longitudinally from individuals during the period of transition. Capturing contemporaneous experience is important, as residents are known to rationalise negative experiences, and influenced by the hidden curriculum, may retrospectively minimise difficulties encountered during training (130, 131). Attempting to, as closely as possible, 'step into the shoes' of the individual as they move from student to doctor, and interpreting their meaning making activities, will facilitate a deeper understanding of this formative period in the professional lives of doctors. An

interpretative analysis of how each individual makes sense of their experience may illuminate meaningful insights even beyond the direct claims of the participant (132), inform curricular change at undergraduate or postgraduate level and guide the provision of appropriate supportive interventions to ease this transition. It would provide insights into the psychological and emotional aspects of the transition to clinical practice, an aspect of the transition that is less emphasised when preparing new graduates for practice (7). To my knowledge it is the first study that analyses the process and experience of transition to clinical practice using an interpretive phenomenological analysis approach.

To further my aim of informing curricular change at undergraduate and postgraduate level, and the implementation of appropriate interventions to support preparedness for the transition from student to doctor, knowledge of the extent of research into existing transitional interventions is required. Therefore, I will conduct a scoping review to map the extent, range and nature of research that has been carried out into interventions that have been implemented to date.

1.12 Research questions

The overarching research questions to be addressed in this thesis are as follows:

1. What is the lived experience of the transition to clinical practice, from prior to commencing work through the first year of being a doctor?

Sub categories of this question comprise the following:

- What is the lived experience of the recent medical graduate anticipating commencing clinical practice?

- What is the lived experience of transition to clinical practice from the perspective of the doctor at the end of the first year of practice?
- What is the lived experience of intra-professional mistreatment in the workplace from prior to commencing practice through the first year of being a doctor?

2. What interventions have been implemented for final year medical students or first year postgraduate doctors to ease the transition to clinical practice?

1.13 Outline of thesis

In this chapter, I have introduced my area of interest, and discussed the current understanding of the transition to clinical practice. The adverse effects that this time has on the health and wellbeing of doctors highlights the problematic nature of the first year of practice. I argue that, in order to address these issues and inform interventions to ease the difficult nature of the transition, a more comprehensive understanding of the experience of transition from the perspective of the individual is required. This study aims to achieve a deeper understanding and appreciation of the experience of the first year of practice as a doctor and to describe the evidence for interventions to support these doctors.

In chapter 2, I make explicit my own philosophical position, discuss and justify the methodology chosen for this research project, including its theoretical underpinnings and outline the methods used. This study uses interpretative phenomenological analysis (IPA) as a methodological approach (133). IPA is particularly appropriate in this context to add depth to the prevailing knowledge, in that it explores the actual lived experience of those who are making the transition to practice. This was carried

out via a longitudinal analysis of how each participant interpreted the process of starting work, and their experience during the first year.

In chapter 3, I discuss my first study, the experience of anticipation of commencing clinical practice. I conducted semi-structured interviews with recent medical graduates on the threshold of commencing practice, with respect to their experience of anticipation of starting work. I analysed the data collected using interpretative phenomenological analysis to achieve an in-depth understanding of this experience from the perspective of the participant.

In chapter 4, I discuss my second study, an exploration of the lived experience of transition to practice. I again carried out semi-structured interviews with participants, this time at the end of the first year of practice with respect to their experience of commencing practice and of their first year of work as a doctor. The data collected was analysed using IPA and identified themes will be discussed.

In chapter 5, my third study explored the perspectives of three participants, with respect to their experiences of intra-professional mistreatment during the transition to practice. Data used for this study comprised of interviews carried out prior to commencing practice, at the end of the first year and audio-diaries that were recorded by participants during the year. Data collected was again analysed using IPA, which facilitated an in-depth exploration of the experience of these three participants with respect to intra-professional mistreatment during the study period.

Chapter 6 contains a scoping review of interventions reported in the literature that support the transition from student to doctor. Interventions discussed were implemented in the final year of medical school or in the first postgraduate year.

Finally, in chapter 7, I summarise and collate the themes derived from my research project and make conclusions with reference to the extant literature. Implications for practice are discussed along with a discussion of the strengths and limitations of the research carried out.

Chapter Two

2. Methodology

2.1 Introduction

In this chapter, I outline the methodology and methods used in my research, and the alignment between them. Firstly, I describe the worldview that has underpinned my choice of a contemporary phenomenological approach, interpretative phenomenological analysis (IPA), to address my research questions. I discuss IPA, its theoretical underpinnings, and consequent methods used for this project: recruitment strategy, sample size, data collection methods, ethical issues and the important consideration of reflexivity. I discuss the assessment of quality with respect to qualitative research in general and in particular with an IPA study. Finally, I discuss the methods used to conduct the scoping review of interventions to support the transition from medical student to doctor.

2.2 Research orientation

The philosophical paradigm of the researcher, (their beliefs or worldviews), is fundamental to the research process, and choice of methodology (134). A paradigm has been defined as 'patterns of beliefs and practices that regulate inquiry within a discipline by providing lenses, frames and processes through which investigation is accomplished' (135). A particular paradigm is characterised by ontological, epistemological and methodological positions. Ontology is concerned with 'the form and nature of reality and therefore, what is there that can be known about it', and

epistemology with ‘the nature of the relationship with the knower and would be knower and what can be known’ (136) Methodology ‘provides the philosophical groundwork for methods’. Making the position of the researcher and the assumptions underpinning research explicit, rationalises the conceptualisation and conduct of research, and facilitates critical appreciation of the outcomes and of the knowledge claims therein (137-139).

I begin my explanation and justification of my methodology by stating my ontological and epistemological beliefs. My perspective on the nature of social reality, is that there is no, one, ultimate truth, rather, reality is subjective and constantly changing (137). This characterises the relativist perspective where ‘reality exists in the form of multiple mental constructions, socially and experientially based, local and specific, dependent for their form and content on the person who holds them’ (136). Rather than seeking an overarching truth, I understand that there are ‘multiple diverse interpretations of reality’. This is known as a subjective epistemology. Meaning is constructed by individuals seeking to understand the world they live in and ‘multiple ways of knowing are valued to uncover the knowledge embedded in human experience’ (140, 141). I believe the researcher cannot be a detached, objective, observer in the research process, rather that there is an inevitable interaction between the researcher and research participants and that knowledge is constructed in the researcher participant interaction (138, 142).

Four major research paradigms are often described (135-137). These are positivism, post positivism, constructivism/interpretivism and critical theory. My relativist ontological position and subjective epistemology is consistent with the interpretivist/constructivist paradigm and that is where I situate this study. The interpretivist/constructivist paradigm is a well-recognised position in qualitative

research (143-146). The interpretivist and constructivist perspectives are acknowledged as sharing 'a common intellectual heritage' (147). In addition, the constructivist paradigm proposed by Guba and Lincoln, accepts the similarity of naturalistic, constructivist, interpretive and hermeneutical positions and has thus been described as 'an eclectic framework' (147).

Proponents of constructivism and interpretivism share a common objective of understanding lived experience from the perspective of the individual. They demonstrate 'an abiding concern for the lifeworld, for the emic point of view, for grasping the actor's definition of a situation, for *Verstehen*.' (147). Verstehen indicates a process to understand 'the way meanings are created, negotiated, sustained and modified within a specific context of human action' (147). They aim 'to understand and reconstruct' the constructions that people hold leading to 'more informed and sophisticated constructions' over time (136, 141). The researcher-participant interaction is central, and may uncover deeper meaning by employing an interpretive effort (a hermeneutical approach) to explore how a phenomenon is understood (137, 143). Because the researcher's perspective is an inherent part of the findings, a study based on these assumptions can never be free from bias. Rather than to attempt to eliminate bias, the researcher reflects on how their preconceptions or relationships with the participants might influence the research, in a process of reflexivity. Transparency regarding the researchers influence on the data, is necessary to facilitate the reader's critical engagement with the research findings (137, 148).

The aim of my research, (to understand how the transition to practice is experienced by those living through it, and the sense that they make of the transition), is congruent with my position as outlined. Furthermore, I was drawn to phenomenology as a methodology to answer my research question, in its focus on exploring and understanding the meaning that individuals make of their lived experience (149).

2.3 Phenomenology

Phenomenology as a qualitative approach, is rooted in interpretivism (133, 137). It aims 'to get to the truth of matters, to describe phenomena, in the broadest sense, as whatever appears, in the manner in which it appears, that is, as it manifests itself to consciousness, to the experiencer' (150). Phenomenology explores how individuals make sense of the world and aims to provide insightful accounts into the subjective experience of these individuals (151, 152). My selection of a phenomenological approach for this project is appropriate in my attempt 'to develop a profound understanding of an individual's experience of a particular phenomenon' (153). There are two major phenomenological traditions – transcendental or descriptive and interpretive or hermeneutic (154). A brief discussion of the theoretical underpinnings of these phenomenological approaches will follow, prior to elaboration of the particular approach chosen for this project.

2.4 Transcendental Phenomenology

Modern phenomenology originated with Edmund Husserl (1859-1938). Central to Husserl's understanding of human consciousness was *intentionality* (133), which was described as, the minds 'directed awareness' of an object or event. Intentionality was fundamental to building one's knowledge of reality, as reality is inseparably linked to one's consciousness of it (155). Husserl came to believe that our worldly engagement with experience was a barrier to consideration of conscious experiences (156), and thus became interested in *intuitive experience*, in its immediacy, before any form of conscious reflection (150). He wished to describe the *essence* of a phenomenon 'stripped of the personal and cultural preconceptions' (133), encompassing the essential components of a phenomenon that make it unique (156). Lived experience, he posited, comprised these common features (universal *essences or eidetic structures*), unchanging and essential structures that remain across contexts, resulting in one correct interpretation of the experience, representing the true nature of the phenomenon (133, 157, 158). This characterises the transcendental phenomenological tradition.

Husserl spoke of '*bracketing*' (156), attempting to see a phenomenon anew by setting aside ones assumptions and preconceptions - which he referred to as 'getting back to the things themselves' (133, 150). He advocated exposing the transcendental structures of consciousness itself, by bracketing off our 'natural attitude' (our concerns and beliefs as part of our consciousness) with a series of phenomenological '*reductions*' (150). For his transcendental or descriptive approach, he developed his *method* which required the researcher to suspend their own preconceptions about the phenomenon to be examined, to achieve 'transcendental subjectivity', a process

known as the *epoche*, and to develop a description of the essence of the phenomenon (133, 150, 158, 159).

This state is achieved through a series of *reductions*, including:

- *Transcendental stage*: a process of bracketing of the 'natural attitude' of the researcher (the epoche).
- *Transcendental-phenomenological reduction*: consideration of each individual's experience and essence.
- *Imaginative variation* – all descriptions distilled to a combined integration of essences.

Husserl's ideas are particularly associated with more 'descriptive' forms of phenomenological psychology (160).

2.5 Existential Phenomenology

Husserl's ideas were developed by the existential phenomenologists, e.g. Heidegger (1889-1976), Sartre (1905-1980), Merleau-Ponty (1908-1961) and others who asserted that our existence is bound up in the world, through our intentionality (133). Heidegger, focusing on *Daesin*, (how the individual was situated within the world), described how humans encountered the world 'in concernful dealing' (150). Merleau-Ponty described people as also 'embodied', with access to worldly experiences only possible through our bodies (161). Sartre discussed the relational nature of experience, that other people around us influence our experiences (161). Combined, they viewed the person as 'embodied, embedded and immersed in the world, in a particular historical, social and cultural context' (162) and so, they were sceptical of the extent to which ones preconceptions can be set aside. They were

more interested in describing peoples 'lifeworld'- how we make meaning for ourselves in the world we live (133). For these phenomenologists, the focus on the worldly, embodied nature of our existence means that inquiry necessitates an interpretative endeavour (160). This characterises hermeneutic or interpretive phenomenology, which began with Martin Heidegger (159). Hermeneutic phenomenology seeks to describe the meaning of a phenomenon and the contextual forces that influence it (163).

In contrast to transcendental phenomenology, hermeneutic phenomenological researchers accept and acknowledge their influence on the research. Our presuppositions and 'forestructures' are always there, although we may not be aware of their full extent initially. Heidegger argued for *reflexivity* rather than *bracketing* in the Husserlian sense. This involves a transparency regarding the revelation and reflection on one's forestructure throughout the research process (154).

2.6 Interpretative Phenomenological Analysis

Interpretative phenomenological analysis was originally described by Jonathan Smith, based at Birkbeck, University of London, in 1996. IPA focuses on how individuals make meaning of their life experiences (156), and has, as its central concern 'a rich and detailed portrayal of personal experience' (164). It has been described as being good at 'unpicking emotionally complex reactions to specific phenomena ……[and] exploring dynamic processes and times of change within people's lives' (161) and therefore tends to be primarily concerned with experience of existential importance to the individual (165). IPA is particularly interested in the exploration of a significant experience in an individual's life, one which causes them

to engage in reflection as they make sense of it (132). It aims to, both give voice- 'capturing and reflecting the claims and concerns of the research participants' and, make sense- providing an interpretation grounded in the participants account (160). It's theoretical roots lie in phenomenology, hermeneutics and idiography (165).

IPA employs a phenomenological emphasis on the experiential claims and concerns of the individual (166). It is informed by the work of Husserl and his focus on the 'attentive and systematic examination of the content of consciousness, our lived experience which is the very stuff of life' (132). IPA is also informed by the work of Heidegger (examining experience within a particular context), Merleau-Ponty (consideration of the physical, 'felt' elements of the experience) and Sartre (the relational aspect of experience) resulting from their view of the individual as 'embedded and immersed in a world of objects and relationships, language and culture, projects and concerns' (161).

IPA acknowledges the role of the researcher in making sense of the participant's account of their experience, and in this way, is connected to the hermeneutic tradition (165, 167). Both a hermeneutics of *empathy*, (attempting to gain an insider's perspective), and a hermeneutics of *questioning*, in the interpretative endeavor of 'analyzing, illuminating and making sense' of this experience have been described by Jonathan Smith (132). Research in IPA has been described as involving a 'double hermeneutic', in that, the participant provides an account of how they have made sense of their experience, and the researcher in turn, interprets this account (167). The interpretive nature of IPA analysis may result in insights which exceed the direct claims of participants (132).

IPA's commitment to idiography, means a concern with detail, in terms of depth of analysis, requiring a thorough and systematic analysis. Its idiographic commitment also applies to the exploration of how a particular phenomenon is understood by particular people in a particular context. The analysis within IPA allows for the detailed examination of each individual case before moving on to make more general claims, including convergence or divergence within the sample (132, 165).

2.7 Other approaches

I considered other qualitative methodologies including narrative and discursive approaches, grounded theory and ethnography and concluded that these would not be appropriate methodological choices.

Narrative research focuses on learning about the lives and experiences of individuals via the stories they recount, with the story as the object of investigation. When people construct narratives about their lives or experiences, they make connections between events and make sense of them (168, 169). The focus of narrative research is how the narrative is constructed by the participant and how the individual positions themselves within their story. (132, 170, 171). My interest is in achieving an understanding of the experience of transition from the perspective of the participant, therefore a phenomenological focus on the interpretation of the participants account of their experience is a more appropriate methodological choice.

Two main versions of discourse analysis are recognized, discursive psychology and Foucauldian discourse analysis. Their shared interest is in the role of language in how experience is talked into being. IPA and discursive qualitative methods are similar in their focus on participants' accounts of experience, however, where IPA

employs a phenomenological emphasis as it seeks to make sense of the participant's account of their experience, discourse analysis focuses on how how language is used in a particular context (132, 133, 166, 171).

Grounded theory focuses on the generation of an explanatory or theoretical framework regarding a phenomenon, grounded in the data collected (132, 153, 172). Where IPA would seek an in-depth nuanced analysis of a small number of participants, 'micro analysis of lived experience', grounded theory seeks a more conceptual or theoretical understanding of a phenomenon, generally based on a larger sample (132). Ethnography likewise, has a different objective, yielding detailed accounts of different social phenomena (actions, behaviour, interactions, beliefs) and providing an understanding of social action or practices in a culture sharing group (153, 173).

2.8 Methods

2.8.1. Recruitment

Selection of participants was purposeful, in that participants were intentionally chosen as being in a position to provide insightful accounts relevant to the research question (149, 162), rather than representative of a population (174). They all experienced the phenomenon that is the subject of this study and were able to articulate their lived experience. They were thus in a position to 'purposively inform an understanding of the research problem and central phenomenon in the study' (153). Because of the idiographic commitment of IPA, sample sizes tend to be small (175). This facilitates an in depth, detailed, nuanced, analysis of each case (132, 156,

176). Large sample sizes could generate overwhelming amounts of data, which could impact on the quality of the analysis.

Participants were recruited from the Southern Intern Training Network. I requested and received a list of those graduates due to commence internship, including contact email addresses from the Network Administrator. I contacted potential participants via email, providing them with information about the project and requesting that they consider participating. Recruitment was purposive, to ensure a gender balanced group and diversity of undergraduate medical programme experience. A narrow window existed for the recruitment process. Many graduates were not available until the week prior to commencing work. Thus, some who were happy to participate were unable to do so due to time constraints. Written information regarding the study was provided and participants gave informed consent prior to commencing the study (Information for participants and consent form- Appendix B). Participants were assured that participation was absolutely voluntary and that they were free to withdraw at any stage.

2.8.2 Data Collection

Data was collected with the aim of eliciting 'rich, detailed, and first-person accounts of experiences and phenomena under investigation' (156). I chose interviews because they facilitate personal exchange of information for a holistic understanding of lived experience from the participant's perspective (149). The semi-structured interview has been described by Smith (2009) as the 'usual' method of data collection in IPA (132) and indeed, the vast majority of published papers using IPA use this method (175). The semi-structured nature of the interviews allowed for a list of questions to be prepared as a general framework to ensure all relevant topics were covered, while also allowing freedom to probe or clarify answers or to pursue

unanticipated insights which emerge during the interview (149). Prior construction of an interview guide also permits consideration of what the interview may cover and any difficulties that may be encountered (132). Audio diaries were used as an additional method of data collection. Audio diaries, although underutilized in qualitative research (177) have been demonstrated to be useful in capturing highly contextualized experience in real time (3, 177, 178). As this form of data collection is participant controlled, it facilitates the disclosure of more personal experience (178). It can also reflect the psychological mind-set in real time, prior to cognitive processing (179), thus providing an insight into participants' sense-making activities including a depth of data that other methods may not achieve (179, 180). Audio diaries can also provide the participant with an outlet for reflection and catharsis (179).

A focus group was carried out with a group of outgoing interns to inform the interview guide for the semi-structured interviews (Pilot focus group interview guide-Appendix C). Individual semi-structured interviews were carried out with each participant prior to the commencement of practice, regarding their experience of anticipation of starting work (Semi-structured interview guide-Appendix D). Although well versed in clinical interview technique and the importance of good communication, I was aware that I was a novice qualitative interviewer. Therefore, in preparation for the focus group and interviews I studied theoretical literature regarding methods, including interview technique (132, 133, 181). In addition, one of my supervisors, DB (Deirdre Bennett), a skilled qualitative interviewer, listened to the audio recording of my first interview to provide feedback and discuss technique. Each participant was provided with an audio recorder, and written information regarding this aspect of the study and invited to make recordings at home of their

experiences, providing a minimum of 3 entries over the 12-month period of the first year of practice. The participants were sent an email reminder regarding the audio-diaries on 3 occasions during the year. In addition, the first audio diaries were collected and assessed just after completion, to ensure that rich experiential data was being collected. Individual semi-structured interviews were again carried out with participants as they neared the end of their first year, with respect to their experience of transition through the first year of being a doctor (Semi-structured interview guide-Appendix D). Each interview was audio recorded. Verbatim transcripts of the interviews and audio-diaries were made.

2.8.3 Analysis

In IPA, the interpretative process allows the researcher to probe deeply into the data to understand and interpret the meaning behind what is being said and the attitudes and values that influence this meaning. An iterative approach to data analysis is used involving a 'loop like pattern of multiple rounds of revisiting the data as additional questions emerge, new connections are unearthed, and more complex formulations develop along with a deepening understanding of the material' (182, 183). This approach thus involves multiple levels of interpretations of the data (162). An inductive stance is employed in IPA, allowing for unanticipated themes to be identified during analysis (167). Inductive reasoning infers ideas from the data rather than using theories to predict what the data will show (149), from initial observation to the identification of recurrent themes and patterns in the data (176). Analysis involves initial total immersion in the data in an attempt to step into the participant's shoes as much as possible, with close reading, listening and making notes regarding observations or reflections (156) and with the researcher moving between emic (insider) and etic (observer) perspectives (156, 184). These notes may include

comments on ‘similarities and differences, echoes, amplifications and contradictions in what the person is saying’ (132). The initial notes are then examined to identify themes regarding the experiential claims of the participants (132). Connections are sought between themes, which are then grouped according to conceptual similarity, making superordinate themes and subthemes, each exemplified with representative participant verbatim quotes (156). Identification of patterns within the experiential claims of participants, emphasising convergence and divergence commences with analysis of a single case, as per the idiographic commitment of IPA, prior to moving on to the next participant (132). Following detailed analysis of all cases, integration of themes across all cases can occur (133, 162).

I followed the steps as described by King (133);

- Familiarisation with the data:

I carried out my analysis on a case-by-case basis for each interview and audio diary set. Analysis involved initial immersion in the data, with repeated reading and re-reading of the transcript, and listening to the recording of the interview or audio-diary. During this process, I actively engaged with the data and took notes of any observations I made, or comments or questions that occurred to me during each reading. This included descriptive comments focusing on the individual’s experience, and more interpretative or questioning comments in my attempt to explore, and more fully understand, the individual’s account of how they made sense of their experience. I assigned summary descriptors which were meaningful in respect of the focus of the research to chunks of data and used NVivo software (185) as a data management tool. This proved to be a useful time-saving tool for organising the data, however did not play any other role in the analysis. This

‘familiarisation with the data’ step was very time consuming as, in addition to the slow process of reading and making notes with the transcripts, additional time was needed away from the data to reflect on the developing analysis, but the time spent on this stage ensured a depth and level of interpretation that a superficial reading would not have yielded.

- Identifying themes

By this time, I had a detailed set of notes and a thorough overview of the transcript as a whole. I focused on the notes, finding connections, relationships and patterns between them and in this way, I began to identify themes- recurrent experiential assertions characterising the nature of the experience being examined. I gave each theme a title, which was a phrase that reflected both the experiential claims of the individual and my interpretative analysis.

- Clustering themes

I next looked for patterns among the identified themes and organised them into groups of themes addressing related issues. I referred to the original transcript to ensure the clustering of themes accurately represented the voiced experience of the participant. I gave each group a title that summarised their commonalities, creating ‘superordinate themes’.

- Constructing a summary table

Following identification of superordinate themes, I constructed a table containing these themes and their related subthemes.

- Integrating themes across all cases

Following analysis of all transcripts across the dataset, I then looked at the summary tables for each case and looked for connections between the cases resulting in a table of themes relating to the group as a whole. Divergence as well as convergence was sought.

A collaborative approach was used with regard to analysis, with my supervisors DB and POL (Deirdre Bennett and Paula O'Leary), and I meeting regularly to discuss the analytic process and identified themes. We resolved conflicting views by revisitation of the data and subsequent discussion. During the data analysis, I made a presentation relating to initial analysis and identified themes at the faculty medical education meeting and the ensuing discussions informed subsequent analysis. This can also be viewed as a reflexive strategy, where knowledgeable colleagues engage in critical discussion with researchers, or as a form of triangulation by providing different perceptions. The research team attended to their reflexivity throughout the research process.

2.8.4 Ethics

Full ethical approval was received from the Clinical Research Ethics Committee of the Cork Teaching Hospitals, University College Cork (Ethical Approval-Appendix A)**.** Ethical practice was maintained throughout the project. Participants were recruited voluntarily, they were given comprehensive information about the study via email initially, and then in person, with the opportunity to ask questions prior to giving informed consent before commencing data collection. Information was supplied regarding the audio recording and transcription of interviews and diaries, the secure storage of data, and the presentation and dissemination of research

findings, with the use of verbatim, anonymised quotes to represent themes. Consent was revisited throughout the project including the reiteration of the right to withdraw at any stage.

Prior to the collection of any data and during the study, I met with my supervisors regularly to reflect on the wellbeing of the participants. We considered the prospect of participant or patient safety issues emerging and the requirement for safeguarding measures in that event, however no intervention was required. Throughout each interview, I monitored each participant's verbal and non-verbal behavior for signs of discomfort or distress, with the intention of responding by not pursuing a particular line of inquiry or approaching a sensitive topic in a different way (132). The principle of confidentiality was adhered to and all data was anonymised with regard to participant identity and location. This study will provide greater understanding of the experience of being a doctor. Findings may inform undergraduate and postgraduate curricular design as well as the implementation of appropriate supportive measures for this key stage in professional development fulfilling its ethical requirement to have a positive purpose.

2.8.5 Reflexivity

The interpretivist position acknowledges the researcher as an integral part of the research process. Although IPA is committed to grounding interpretation in the views of the participant (160), it also seeks to acknowledge rather than diminish the role of the researcher, by exploring and reflecting on any possible 'inter-subjective dynamics between researcher and data' (186). Reflexivity is commonly viewed as 'the process of a continual internal dialogue and critical self-evaluation of researcher's positionality as well as active acknowledgement and explicit recognition that this position may affect the research process and outcome' (187). This means

‘sensitivity to the ways in which the researcher and the research process have shaped the collected data including the role of prior assumptions and experience’ (188). We are required to ‘look inwards and outwards, exploring the intersecting relationships between existing knowledge, our experience, research roles and the world around us’ (133) by critically reflecting with the research team on how our prior experience and beliefs (our ‘forestructures’) about the phenomenon may impact on the research process. This occurs throughout the process as one may not be aware of all one’s preconceptions initially (132). Reflexivity includes the researcher recognising the necessity to tolerate ambiguity, and the possibility of encountering differing opinions (189). Attending to one’s reflexivity enhances the credibility of the study.

2.8.6 Researcher positionality

I am a medical doctor who has worked in a number of different Irish hospitals at various stages over the last twenty years. I have been formally involved in undergraduate medical education for the past ten years. On many levels therefore, I have close personal and professional connections to the research questions that may influence data collection and analysis. Throughout the research process I engaged in reflexivity, continually reflecting on how my attitudes and preconceptions might be informing the research. I kept a reflexive journal and discussed and reflected with my supervisors on how my experience, preconceptions and beliefs may impact on the process. (Excerpt from reflexive diary- Appendix E)

I was aware that as an ‘insider’, I would naturally have preconceptions and beliefs regarding the research questions. I felt that while familiarity with the nature and language of the context may be of some benefit, I was cognizant of the danger that I might expect my experience to translate into knowledge about how others may experience it. I also reflected on how my own emotional reactions to participants’

experiences may impact on the interview or analysis process. Due to my position in undergraduate education I would know and be known by many of the study participants. While this meant that I would already have a rapport with them, which may enhance the interview stage, I was conscious that this familiarity might also potentially negatively affect the process. Participants may for example feel compelled to participate, or they may not feel comfortable divulging all aspects of their experience. I ensured that all participants were aware that participation was voluntary and that they could withdraw at any stage. Although some participants would recognise me as a member of the undergraduate faculty, I had no oversight or involvement with them at postgraduate level.

2.8.7 Quality

Guba and Lincoln (1994) proposed four criteria to appraise the trustworthiness of qualitative research, which are widely used: credibility, dependability, confirmability, and transferability (136, 140, 149, 190-194). Note that, while dependability refers to replication of findings in similar circumstances, this is not possible with respect to the philosophical orientation of this study, however the demonstration of consistency and rigor in the research process will enable the reader to make a judgement regarding consistency, in relation to the circumstances in which the findings were generated.

Regarding quality with respect to interpretative phenomenological analysis, Smith particularly recommends two approaches (132); guidelines produced by Elliott et al and also by Lucy Yardley (195, 196). Elliott et al have produced guidelines ‘to promote greater self-reflection in the course of conducting qualitative research’ (195). Their initial guidelines are applicable to both quantitative and qualitative research. These include: having an explicit scientific content and purpose, using

appropriate methodology and methods with respect to the research question, and a commitment to respect for participants (informed consent, maintaining the confidentiality and welfare of the participants and ethical practice throughout the research process). Other recommendations include a clear documentation of all methods employed in the research process (including participant recruitment, data collection, analysis and presentation, the inclusion of an appropriate discussion, clear presentation of research and a contribution of the findings to existing knowledge). Elliott et al also provide guidelines specific to qualitative research. Lucy Yardley has provided four broad criteria for assessing quality (196); sensitivity to context, commitment and rigor, transparency and coherence and impact and importance. I have demonstrated in Table 2.1 how my methodological approach has ensured the quality of my research.

Table 2.1: Quality table

Guba and Lincoln (1994)	**Elliot (1999)**	**Yardley (2000)**
Credibility: ***(***trustworthy and believable findings) I have used skillful interview technique and an iterative approach to data analysis. Peer debriefing – I attended regular supervisor meetings, and delivered presentations regarding literature review, methodology and initial emergent themes at medical education faculty meetings.	***Owning one's perspective****:* I have defined my own position and worldview. I situated myself with respect to the study, and practiced reflexivity throughout.	***Sensitivity to context****:* I have exhibited, via methodological choice, data collection, and analysis choices, sensitivity to the sociocultural milieu, and the extant literature.
Dependability: I followed rigorous recruitment, data collection and analysis procedures. I kept a clear audit trail. I carried out peer debriefing as described in 'credibility'.	***Situating the sample:*** I have described the participants with respect to gender, age, degree program; type and location.	***Commitment and rigor:*** I recruited an appropriate sample, elicited rich data via interview and conducted a comprehensive in-depth analysis.
Confirmability: *(extent to which findings reflect data****)*** I have disclosed all relevant aspects of the research process. I adopted a recognised methodological framework- IPA. I grounded themes in the participants' voices with the aid of representative verbatim illustrative quotes. I discussed my positionality as a researcher and practiced reflexivity throughout.	***Grounding in data:*** I grounded themes in the participants voices with the aid of representative verbatim illustrative quotes.	***Transparency and coherence:*** I have provided a clear description of the research process, and have offered a coherent argument, with logical themes consistent with the methodological framework.
Transferability: *(applicability of findings to other contexts)* I have provided a 'thick description' with relevant participant demographics and a rich detailed description of the context, methodology and all research processes. I discussed my findings with reference to the extant relevant literature.	***Credibility checks:*** I attended regular supervisor meetings during data analysis to discuss the experiential themes.	***The impact and importance of the research findings*** are described as the real test of validity and are summarised in the final chapter of this thesis.
	Accomplishing general vs specific research tasks*:* I have reflected the study objective in the data analysis and write up. I have acknowledged the lack of generalisability of my findings.	
	Resonating with readers*:* My objective of achieving an in depth understanding of the lived experience of transition to clinical practice from the perspective of the participants involved was achieved with this research.	

2.9 Scoping Review

I wished to achieve an in-depth exploration of the lived experience from student to doctor, so that my findings would inform curricular design and the development of interventions at undergraduate and postgraduate level to support this transition. Knowledge of the current state of research regarding interventions will guide future research arising from the findings of my thesis. Therefore, I carried out a scoping review of the literature to attain a broad overview of the extent of research that has been carried out on interventions to support the transition to clinical practice.

I chose to carry out a scoping review rather than another type of literature review, for example a systematic review, as I felt that a scoping review was best suited to answer my research question: What interventions have been implemented for final year medical students or first year postgraduate doctors to ease the transition to clinical practice? Systematic reviews and scoping reviews are similar in their use of explicit, transparent, structured and rigorous methods to address their research questions (197, 198). A systematic review however, would be more suitable to summarise the best available evidence in order to answer a specific research question. This commonly results in a focus on a small number of critically appraised studies using predefined study designs (197, 199-201). My research question is broad and exploratory in nature, reflecting the defined aim of scoping reviews; ‘to map rapidly the key concepts underpinning a research area and the main sources and types of evidence available, and can be undertaken as stand-alone projects in their own right, especially where an area is complex or has not been reviewed comprehensively before’ (202). Mapping the literature describes a process of summarising the available research in an area of interest, irrespective of study quality, to represent its depth and breadth (201, 203). According to Arksey and

O'Malley, scoping reviews can be used to explore 'the extent, range and nature of research', 'to summarise and disseminate research findings', 'to identify gaps in a particular field' or 'to determine the value of doing a systematic review' (202). They can also examine the terminology, definitions and conceptual boundaries of a research area (198, 201). The first methodological framework for carrying out a scoping review was published in 2005 by Arksey and O'Malley (202). Each stage in this framework was clarified and extended by Levac et al (201) followed by the publication of formal guidance for the conduct of systematic scoping reviews in 2015 by a working group of the Johanna Briggs Institute (203).

I carried out a scoping review of interventions to support the transition from medical student to doctor informed by the aforementioned frameworks. I assembled a research team of experts in both methodology and research question to participate in this review. A team approach strengthened validity by achieving team consensus regarding inclusion/exclusion criteria, study selection, and data extraction and enabling independent review of papers for inclusion by 2 researchers. The nature of the scoping review involves the screening of a large number of studies generated by the scoping search strategy, which can be very time consuming; the involvement of a research team for this review supported the screening process (201, 203, 204). To ensure the methodological quality of this scoping review, I referred to the 22 item reporting guidelines (20 essential item and 2 optional items) devised for the Johanna Briggs Institute (204), the PRISMA ScR (Preferred Reporting Items for Systematic Reviews and Meta Analyses- extension for Scoping Reviews) (PRISMA-ScR checklist- Appendix F). The strength of scoping reviews include the rigorous methods used, the inclusion of multiple study designs and methodologies and the

provision of valuable information regarding the extent of research activity relating to a particular area of interest (202).

The quality of identified studies is generally not appraised in a scoping review, nor is a synthesis of the evidence carried out, that is, the evaluation of the strength of evidence to answer a specific research question. This may be interpreted as a limitation, however, as the aim of a scoping review is exploratory, to map research activity in a particular area, more specific research questions requiring quality appraisal and data synthesis may be addressed by a systematic literature review (201, 202). Some researchers however acknowledge that the issue of quality appraisal in scoping reviews requires further discussion (201, 205).

Chapter Three

3. ‘Waiting in the wings’; lived experience at the threshold of clinical practice

3.1 Introduction

To fully understand the experience of the transition to clinical practice, it is important to explore the experience of new medical graduates before they commence practice. Even before starting work, graduates can feel intimidated in anticipation of the responsibility to be assumed, uncertain about what is expected of them and unprepared for certain aspects of practice (4, 6, 34, 35, 40, 60, 206).

Expectations prior to transitions are important. A newcomer to an organisation may experience ‘reality shock’, due to a disparity between anticipation and actual experience. Expectations of the job, or, of their performance or emotional reactions to it, may diverge from the reality encountered (110). In the case of medical students, competencies they considered unimportant in medical school can assume great significance on commencing work (8, 207, 208). Lack of preparedness can cause anxiety and a fear of negative consequences for those in their first year of clinical practice (209). Graduates have high expectations of the standard at which they should perform. Failure to meet these standards can be distressing (4, 6, 210). They may also lack awareness of the pervasive nature of professional stressors in medicine, wrongly blaming themselves for perceived inadequacy on commencing practice (8). Furthermore, uncertainty regarding others’ expectations of them in the workplace can result in a reluctance to seek help, due to a fear of negative scrutiny (35).

Much of our understanding about how the transition is experienced is based on opinions and attitudes of residents looking back at the transition to clinical practice. Less emphasis in the literature has been placed on exploring the experience of medical students and recent graduates as they contemplate the transition (10, 11, 60, 61, 65). Studies that have focused on competence and preparedness have provided us with some appreciation of the student perspective (40, 69, 74, 211). Additional insights have been garnered from research into interventions aimed at easing the transition. These studies have revealed some concerns regarding lack of preparedness, and issues relating to responsibility, support, and workplace relationships (212, 213). The contemporaneous lived experience of new graduates on the threshold of clinical practice has not been described. A more comprehensive exploration of the experience of graduates as they anticipate commencing work would deepen our understanding of this very important time in the professional development of doctors and could help medical educators to provide targeted support to ease the transition.

The aim of this study was to address this gap by providing an in-depth analysis of the lived experience of medical graduates as they anticipate the transition to clinical practice. My research question is: What is the lived experience of the recent medical graduate anticipating commencing clinical practice?

3.2 Methods

A full description of the methodology used, interpretative phenomenological analysis (IPA) and the context for the research is provided in chapter 2.

3.2.1 Recruitment

I requested a list of those graduates due to commence internship, including contact email addresses, from the Southern Intern Training Network. I contacted a total of thirty-five potential participants via email, providing them with information about the project and requesting that they consider participating.

There was a narrow window for the recruitment process. Many graduates were not available until the week prior to commencing work. Thus, some who were happy to participate were unable to do so due to time constraints. Recruitment was purposive, to ensure a gender balanced group and diversity of undergraduate medical programme experience. Written information regarding the study was provided and participants gave informed consent prior to engaging in the semi-structured interviews (Appendix B- Information for participants and consent form). Participants were assured that participation was absolutely voluntary and that they were free to withdraw at any stage.

3.2.2 Data collection

I conducted a pilot focus group with a group of outgoing interns to inform the semi-structured interview schedule, which was underpinned by principles of IPA (Appendix C- Pilot focus group interview guide). I then conducted individual semi-structured interviews with each participant, which were held in the 2 weeks prior to the commencement of clinical practice. (Appendix D-Semi-structured interview guide). All interviews were audio recorded, transcribed verbatim and anonymised.

The potential need for intervention or support regarding the wellbeing of participants was considered in consultation with my supervisors during data collection, however no such intervention was required.

3.2.3 Data Analysis

Data was analysed using IPA as described in chapter 2 (132, 133). Analysis began with immersion in and familiarisation with the data. I then identified experiential themes, which were given titles to reflect both the experiential claims of the participant and my interpretative analysis. Themes were grounded in participants' voices with the aid of verbatim illustrative quotes. They were then grouped into clusters of themes addressing related issues called superordinate themes. Each transcript was analysed fully prior to moving on to the next one. When all data was analysed, integration of themes across the entire dataset was carried out and commonality and divergence were noted. Nvivo software was used as a data management tool (185). I met regularly with DB and POL during the data analysis process to discuss the experiential themes identified. We supported each other's reflexivity and kept reflexive diaries throughout the process.

3.3 Results

Fourteen participants were recruited. All participants, six males and eight females, were graduates of Irish medical schools. Four held prior degrees and had studied medicine in a medical course specifically tailored for graduates; the remainder had commenced their medical degrees directly from high school. Twelve of the participants had attended the local university aligned with the Southern Intern Training Network. Interviews ranged between 32 minutes 2 seconds and 70 minutes

48 seconds in duration. Demographic details with respect to the participants and duration of individual semi-structured interviews are outlined in table 3.1. Pseudonyms have been used to preserve anonymity.

Table 3.1: Participants' demographic details and interview duration.

Name (pseudonym)	**Gender: Male (M) Female (F)**	***Graduate Entry (G.E) or Direct Entry (D.E.)**	**Interview Duration: Minutes (m) Seconds (s)**
Andrew	M	G.E	35m38s
Brian	M	G.E.	41m27s
Claire	F	D.E.	36m32s
Deirdre	F	G.E.	32m02s
Eugene	M	D.E.	46m
Faye	F	G.E.	52m08s
Gerard	M	D.E.	65m14s
Hannah	F	D.E.	70m48s
Irene	F	D.E.	44m57s
Jennifer	F	D.E.	59m51s
Karen	F	D.E.	34m38s
Lucy	F	D.E.	40m27s
Mark	M	D.E.	55m50s
Noel	M	D.E.	59m47s

*Direct Entry- medical graduates who entered medical school from second level/high school. Graduate Entry- medical graduates who held a degree prior to medical school

I draw on the metaphor of the actor 'waiting in the wings' as an effective means to capture the totality of the experience of the medical graduate on the threshold of commencing practice. Metaphor is commonly used in reporting qualitative research (214). In this case the metaphor was chosen as I discussed superordinate themes reflected in participants' accounts with my supervisors. The experience of the actor,

about to step into the spotlight, is mirrored in the superordinate themes identified as participants made sense of this critical period, themes of abrupt transformation, mixed feelings and strategic planning. There were no significant themes in the data that diverged from this metaphor. Figure 3.1 shows the superordinate themes identified and their sub-themes.

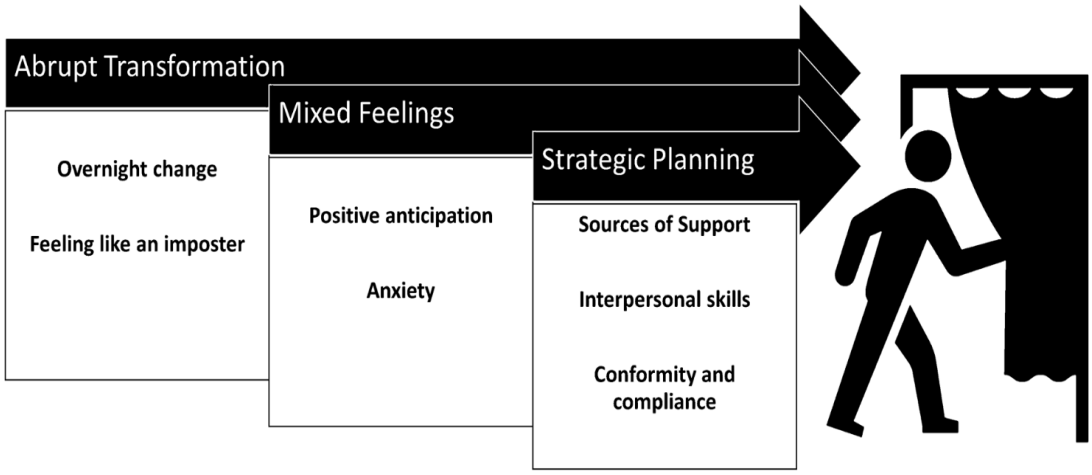


Figure 3.1: Superordinate themes and their subthemes (study 1)

3.3.1 Abrupt transformation

This theme included subthemes of 'overnight change' and 'feeling like an imposter'.

Overnight change:

Like an actor stepping onto a stage, most participants anticipated an abrupt transformation, from a position of invisibility and marginalisation as a student, to greater integration, participation, status and visibility.

'I can't wait to actually have a purpose, and a team as well, because as a student most of the time you are just following teams around, most of the time they don't want you there, you're being ignored a lot of the time' (Deirdre)

'It's going to be a big change, it's going to be a shock to the system, ... it's not like medical school ...you have a job to do and it's up to you to do it, just a bit of responsibility that we haven't had before I guess' (Eugene)

Feeling like an imposter

Just as the actor wishes to convey their character with authenticity, participants worried about how they would inhabit their role, some feeling that they would not actually feel like a doctor at all in the early transition.

'It's very strange to think of myself as a doctor, ... I'll probably feel like an imposter for a little while' (Brian)

3.3.2 Mixed Feelings

Waiting in the wings, the actor experiences mixed emotions. After long hours of rehearsals, they eagerly anticipate their moment to perform; however, they are also apprehensive. This theme included subthemes of '*positive anticipation'* and *'anxiety'*.

Positive anticipation

Most participants expressed excitement at the prospect of commencing work. They were relieved at having completed the arduous undergraduate phase, and were looking forward to moving on to the next stage of their professional development.

'I'm really excited because I have been looking forward to this for so long' (Irene)

'My main thing would be the excitement, to be finally, ... it was a long slog... so it's good to be moving onto the next phase' (Mark)

'Just regaining your life back I suppose' (Claire)

Anxiety

However, the dominant emotion expressed by participants was anxiety regarding the uncertainty and unpredictability of what lay ahead. In particular, assuming responsibility, and their anticipated feelings of fear and stress, as well as the isolation of nights on call, were sources of concern.

'So I am definitely anxious going into it anyway, there's a kind of a big element of not really knowing what to expect, or how well you are going to perform,' (Lucy)

'*Definitely heading into my first medical call I will be quite anxious. It just feels like a lot of responsibility..*' (*Gerard)*

Most participants worried about their own performance; of not measuring up or that their mistakes might harm patients.

'Obviously .. that I would hurt someone, or I would cause .. some damage, or that I would do something really stupid or .. something .... that would be obvious to everyone else, but I just make a silly mistake.' (Andrew)

Gerard considered his performance in the complexity of the busy clinical environment.

> *'Even if I had all the clinical knowledge in the world I would probably still be under stress from the sheer volume and also the pace at which I would be required to do it.' (Gerard)*

Many also expressed concerns about the physical and emotional demands of their new jobs, with Andrew raising the potential of burnout.

> *'I presume we are going to be so tired, you know, so tired all the time' (Karen)*
>
> *'I would just be worried about feeling or becoming jaded.' (Andrew)*

Actors expose themselves to the scrutiny of others. Participants, likewise, considered the scrutiny that awaited them. They wished to prove themselves worthy colleagues. A fear shared by most participants, was that their inexperience might compromise the efficiency of the team resulting in negative evaluation. This awareness of scrutiny by seniors contributed to ambiguous feelings regarding seeking support. While acknowledging they would need support, they expressed a reluctance to ask for it because of their desire to be judged as competent and in control.

> *'I would feel that you don't want them to know that you feel a bit inadequate or something, ……you don't want to burden your team or kind of make it look like you are not able for the job' (Jane)*

In addition, some participants also expressed their anticipation and apprehension regarding potential conflict in the workplace.

'You'd be a bit worried about how you'd get on with certain consultants like, you know I suppose it's like anything, certain people have a reputation that precedes them' (Andrew)

3.3.3 Strategic planning

An actor about to step on stage plans how to deliver the best possible performance. He/she is aware of other actors whose words and actions will influence his/her own performance. Likewise, participants strategised about how they would act with and react to the other players in the workplace. Subthemes identified under this theme were '*sources of support'*, *'interpersonal skills'* and '*conformity and compliance'.*

Sources of support

Participants contemplated how they would access support, citing nursing colleagues, with their experience and close proximity on the wards, as potential first ports of call.

'They are the ones who are around the wards and we'll be leaning on them for whatever. If a patient is sick, I'm sure they'll be quicker to spot it than you are …. Especially at the beginning when you are taking your baby steps into the working world.' (*Eugene)*

They also hoped that the solidarity of their intern colleagues and that the empathy of previous interns would provide additional support for them. The team structure was

recognised as providing a defined 'chain of command', however all described the arbitrary nature of this support.

'*I think that *SHO's, especially new SHO's, .. they were just where we are, so they maybe understand, .. and would hopefully be willing to answer your calls. I also think as well, I think the interns will support each other.'(Claire)*

'I think that will depend on the team…how willing they are to support you…I hope they are supportive ..but I don't know is it always there, I think it is very much team dependent' (*Deirdre)*

(*Senior House Officer- post graduate year 2 and 3)

Interpersonal Skills

Participants expressed a desire to integrate well into their new workplace, recognising the benefit of good communication and interpersonal skills for a smoother transition experience.

'I want to get on with everyone you know, I think it will make everything smoother. Because if you are on call and you need to call someone you won't feel as awkward being like 'sorry I'm calling you in the middle of the night' .... and I really want to get on with the nurses as well because of that fear the whole time.' (Claire)

Many anticipated that, although their interactions with their nursing colleagues might not always be positive, it was important tactically to foster good relationships with them. They recognised the power of nurses as a group and expressed a desire not to

get on their bad side, fearing negative consequences. Some felt it necessary to cultivate a self-effacing attitude in interactions with nurses.

> *'Erm, it's a bit daunting I'll be honest with you. I feel like there is nearly an obligation, ... not the word, 'buttering them up' isn't the right phrase but I ... feel like I would like the nurses on my side because..... nurses are fantastic and I've great respect for them in every sense, but they can be quite sharp and they can put you in your place.' (Faye)*

Conformity and Compliance

Participants expressed a determination to comply with all the potential demands of their workplace.

> *'I'm not sure if I'll have time for lunch everyday honestly... I haven't really thought about it, but if there is a day that I don't get lunch, I don't know what I'll do, I think I'll bring a couple of snack bars in my bag or something, ..Breaks weren't really a priority for me going into this' (Hannah)*

Regarding the prospect of negative interactions, they did not anticipate challenging people who behaved in an unprofessional manner towards them, often citing their low position in the medical hierarchy. Instead, there was a suggestion that they should toughen up and accept it. Jane worried about her own emotional reaction to negative interactions feeling that she ought to be able to withstand and tolerate it. Hannah expressed the divergent opinion that 'a stern word' may be of academic benefit and 'is not always a bad thing I suppose'.

'I'd like to say that I'd stand my ground but I very much feel that I'm going to be on the lowest rung of the ladder so I do feel there will be compromise on my part I'd say to deal with situations like that.' (Gerard)

'Yeah, I suppose that will probably be one of the things that worries me.., as I would be a bit sensitive … and it might upset me a bit, but I think I am just going to have to deal with it, that's part of just taking things on the chin and getting a bit of a hard skin about it, you know.. just take a moment when needed and then move on and say, look maybe they're having a bad day'. (Jane)

3.4 Discussion

3.4.1 Principal findings

The metaphor of the actor waiting in the wings is used here to explore the phenomenon of the transition from medical student to doctor from the perspective of recent graduates about to commence practice. As actors await their cue, they contemplate their imminent performance, how they will perform the role, adapt to the new set, interact with other actors and with the audience. Participants in this study, likewise, deliberated over how they would inhabit the role of competent intern, perform in the complexity of the clinical setting, improvise in response to the behaviours of others, and impress a critical audience of peers, senior doctors and other healthcare professionals. I have provided an insight into their excitement, expectancy, doubts and uncertainty as they stand on the threshold of practice.

3.4.2 Transition Shock

Participants' anticipation of the transition as an abrupt change in role and responsibilities, and the apprehension they expressed at the thought of being suddenly thrust into the limelight in this way, echo the phenomenon of 'transition shock' described in newly graduated nurses (70, 109). 'Transition shock' is an intense period of adjustment, characterised by feelings of inadequacy, anxiety, stress and powerlessness resulting in physical and emotional exhaustion. An important contributory factor to this experience is a disparity between expectations of the contributions undergraduate students and recent graduates should make in the workplace (109). Theories of workplace learning espouse gradual and progressive participation in practice (107), and tell us that medical students become capable and trustworthy doctors by making meaningful contributions to patient care (215). Participants in this study had rehearsed the role of doctor, gone through the motions in simulated and authentic settings, and yet it is clear that they anticipated that the performance of the role would be qualitatively different to the rehearsal. For them, status and responsibility appeared to be the key differentiating aspects of being a doctor. Traditionally, in Ireland and the UK, undergraduate medical education has not provided students with many opportunities for the supported assumption of clinical responsibility (40). More recently, interventions such as subinternships and assistantships, where a senior medical student assists 'a junior doctor and, under supervision, undertakes most of the duties of an F1 doctor', have been employed in an effort to bridge this training practice gap and ease the abrupt nature of the transition (216, 217). It appears that these interventions can improve students' self-assessed preparedness to undertake the tasks of a doctor (218, 219). It is less clear whether they offer an opportunity to feel the status and responsibility of being a

doctor. Despite experiencing these types of interventions, participants in this study anticipated the transition as an overnight transformation.

3.4.3 The Hidden Curriculum

Medical culture exerts a significant socialising influence on medical students regarding what it means to be a doctor (108). The hidden curriculum has been defined as a '*set of influences that function at the level of organisational structure and culture including… implicit rules to survive the institution, such as customs, rituals and taken for granted aspects*' (220). This study revealed the impact of the hidden curriculum on the meaning that participants made of working in clinical environments, the transition to practice and their plans in response its challenges. On the negative side, what they had seen and heard as medical students led them to express apprehension about support, scrutiny, the likelihood of difficult relationships with staff and challenges to their health and wellbeing. They appeared to be bracing themselves for an experience to be endured rather than enjoyed. Participants' planned behaviour to cope with these challenges was often dysfunctional and driven by unspoken cultural expectations. These included not taking breaks or eating properly, not necessarily seeking help when it was needed, and accepting being the target of rude, aggressive and dismissive behaviour.

Haidet and Stein described some of the cultural premises implicit in the hidden curriculum; doctors must be perfect, uncertainty and complexity are to be avoided, outcomes are more important than processes (e.g. certain behaviours can be excused if the desired outcome is positive), medicine takes priority, and hierarchy is necessary (221). Discourses of competence may be prioritised over those of caring in medical education, and vulnerability equated with incompetence. These messages compel students to prove their suitability for the profession by presenting themselves

as confident, competent and capable, and to hide self-doubt or vulnerability (222-224). This can manifest as high personal expectations, and concerns about competence and adequacy, which exacerbate the stress of the transition, consistent with the feelings expressed by participants in this study (35, 225, 226). It also results in a reluctance to approach senior doctors for support (227), with potential risks to patient safety as a result.

The hidden curriculum contributes to a stigma towards doctors with mental health problems, who may be viewed as less competent or employable. Resonating with our participants' experience, previous studies have revealed a reluctance among trainees to admit to feeling overwhelmed, or to access support services, for fear of professional repercussions (17, 100). Participants were determined to comply with all the potential demands of the job including long hours and high work intensity. Even prior to commencing work, participants appeared to prioritise the implicit message of 'unwavering duty' and to 'soldier on' above self-care and compassion (227, 228).

Participants, anticipating conflict in their new workplace, had already resolved to endure and accept it. Bullying, intimidation and harassment often starts in medical school (220, 229, 230). Teaching by humiliation is one of the main ways that students learn about the importance of the medical hierarchy (220). The hidden curriculum cultivates a tolerance of bad behaviour in the clinical setting (231). Although provoking feelings of despair and hopelessness among students, a common response is to remain impassive and expressionless (232). They may excuse unprofessional behaviour of senior doctors, instead implicating external factors such as workload or fatigue or they may blame themselves for it (220). These attitudes are reflected in the pre-emptive rationalisation of bad behaviour observed in this study.

Bullying, intimidation, and harassment are endemic in postgraduate training and appear to be accepted as part of the workplace culture. These behaviours continue to be under-reported with trainees fearing personal and professional consequences (94, 100, 233). There is a danger that this behaviour, may in turn, be imitated by trainees, through their unconscious acquisition of the bad behaviour of their role models (234).

3.4.4 Support

More positively, participants did anticipate some supportive elements in the workplace. They identified their peers or their nursing colleagues as initial ports of call for assistance. They anticipated that their nursing colleagues would be available on the wards for uncritical advice and orientation, a perception borne out in the workplace (235). Their identification of the team structure for support and reassurance is consistent with evidence of its positive impact on wellbeing and sense of preparedness in the first year of practice (50, 60, 65). Participants intended to strategically foster good relationships with their colleagues to smooth their integration into the workplace. The intention to engineer a good relationship with their nursing colleagues for fear of the consequences of annoying or provoking them, and the perception that support from nurses can be variable (11, 60) suggests that participants understood that inter-professional working relationships might be problematic.

3.5 Conclusions

Waiting in the wings, on the threshold of clinical practice, participants in this study were bracing themselves for a trial by ordeal. The hidden curriculum shaped their

understanding of what was expected of them as new doctors, and inspired dysfunctional strategies to meet expectations. These findings and their implications for practice will be discussed in more depth in chapter 7: Discussion.

Chapter Four

4. ‘Endured and Prevailed’; lived experience of the transition from student to doctor through the first year of clinical practice

4.1 Introduction

The transition from student to doctor has been defined in terms of ‘a dynamic process of professional discontinuity, in the form of changes in expectancies, tasks or responsibilities, requiring the doctor to develop coping strategies in order to function competently in their new environment’ (ref chapter 1). It has also been referred to as a ‘rite of passage’ for newly qualified doctors, a process over time, involving different phases of, separation (withdrawal or detachment from a previous status or identity), transition (the in-between or ‘liminal stage’), and incorporation (assumption of new status or identity) (236-239). Nicholson’s theory of work role transitions, describes a cycle in perpetual motion, each stage having different sets of tasks, expectancies, problems and solutions, and comprising of, prior preparation, followed by the initial encounter, a period of adjustment and a stabilisation phase (112, 240).

The conceptualisation of a work transition in healthcare, as a period of change, is captured in the extensive work that has been carried out on the transition of nursing graduates to professional practice (109, 241). Kramer notably described an initial ‘honeymoon stage’ during orientation, characterised by idealism and excitement, followed by ‘reality shock’, where the disparity between the expectations and the reality of practice provoked feelings of anxiety, doubt and confusion. After ‘reality

shock' comes 'recovery' with reduced anxiety, and coping and 'resolution' resulting in success or burnout (241). Informed by Kramer, Duchscher described the transition of nursing graduates over their first 12 months as encompassing 'a complex but relatively predictable array of emotional, intellectual, physical, sociocultural and developmental issues that in turn feed a progressive and sequential pattern of personal and professional evolution' (109, 111).

There is a paucity of research that explores the experience of the transition from medical student to doctor from the perspective of the individual, encompassing change or evolution over time. Various aspects of this important period in the lives of new doctors have been the focus of medical education research. Different features of the initial transition period have been explored. New doctors generally perceive it as a major change; they can lack confidence and feel anxious in their role, with new responsibility and changing relationships with their workplace colleagues (4, 6, 11, 59, 60, 62, 210, 211, 242). Research on workplace stressors during the first year of practice has revealed that issues with support, workload, challenging relationships and differing expectations between new doctors and other healthcare professionals, can contribute to psychological distress in this group (63, 73). Challenges to new doctors' professional identity formation or factors that facilitate or hinder personal growth during internship have also been explored (10, 11, 62). These challenges include adapting to the medical culture, confidence, work life balance, self-care, and interactions with patients and colleagues. Supportive relationships have been shown to be important for personal growth.

Some studies, focusing on preparedness for practice, have adopted a longitudinal design, exploring the experience over the first year in terms of a 'preparedness journey' over time (6, 7, 40, 74). These studies highlight the importance of

experiential learning for preparedness for practice and for the development of competence and confidence over time. The dynamic nature of transition from student to doctor is also mirrored in the variations in mood, empathy, stress and wellbeing reported in new doctors over the course of the first year (38, 50, 51, 54, 64), with new medical graduates' wellbeing shown to deteriorate during this time.

In summary, the current understanding of the first year of practice for new medical graduates includes an appreciation that it is an intense, formative experience, involving specific challenges and stressors, with temporal variations in emotion, and wellbeing. However the variety of contextual and cultural factors in the workplace that influence the behaviour of new doctors (35) suggests that the actual experience of transition as a dynamic, transformative process over time is more complex than is currently understood. Therefore, in order to advance the current understanding of the transition, I wish to provide an in depth exploration of the lived experience of transition from the perspective of the doctor at the end of the first year of practice. How individuals make sense of the transition and how this experience evolves over time, will add a deeper layer to our understanding of this very important period in their development.

My research question for this study is: What is the lived experience of transition to clinical practice from the perspective of the doctor at the end of the first year of practice?

4.2 Methods

4.2.1 Recruitment

The recruitment of participants for this project has been described in chapter 3. As the first year of postgraduate practice neared completion, I contacted the participants who took part in the initial semi-structured interviews prior to the commencement of practice, as previously arranged, to take part in a second interview, with respect to their experience of transition through the first year of being a doctor. These interviews are the focus of this chapter.

4.2.2 Data Collection

I carried out individual semi-structured interviews with participants as they neared the end of their first year (Semi-structured Interview Guide- Appendix D), with respect to their experience of the first year of practice. Interviews were recorded and transcribed verbatim. Transcripts were anonymised and pseudonyms were used in the reporting of the results.

4.2.3 Data Analysis

Data was analysed using interpretative phenomenological analysis as described in chapter 2. I met regularly with DB and POL during the data analysis process to discuss the experiential themes identified, which were then grouped into clusters of themes addressing related issues called superordinate themes. Each transcript was analysed fully prior to moving on to the next one. When all data was analysed, integration of themes across the entire dataset was carried out and commonality and divergence were noted. I used NVivo software as a data management tool (185). We supported each other's reflexivity and kept reflexive diaries throughout the process.

4.3 Results

Twelve participants agreed to take part in these interviews, six males, (two who had prior degrees and four who commenced their medical degrees directly from high school) and six females (two who had prior degrees and four directly from high school). Participants had worked in the Southern Intern Training Network, in affiliated hospitals and primary care settings. They were approaching the end of twelve months of training. During this time each had spent a minimum of three months in General Surgery and three months in General Medicine. The remaining two, three-month, rotations were spent in other specialties such as Paediatrics, Psychiatry, Surgery, and General Practice.

Interviews lasted between 39 minutes 50 seconds and 85 minutes 01 second. Participant demographics and interview duration can be seen in table 4.1

Table 4.1: Demographics of participants and interview duration

Name (pseudonym)	**Gender: Male (M) Female (F)**	**Graduate Entry (G.E) or Direct Entry (D.E.)**	**Interview Duration: Minutes (m) Seconds (s)**
Andrew	M	G.E	54m40s
Brian	M	G.E.	71m18s
Claire	F	D.E.	63m34s
Deirdre	F	G.E.	39m50s
Eugene	M	D.E.	58m10s
Faye	F	G.E.	58m33s
Gerard	M	D.E.	66m33s
Hannah	F	D.E.	85m01s
Irene	F	D.E.	56m34s
Jennifer	F	D.E.	64m07s
Mark	M	D.E.	71m12s
Noel	M	D.E.	83m26s

G.E. (Graduate entry)- Students had a prior degree. D.E. (Direct entry)-Students entered medical school directly from second level.

Data analysis identified superordinate themes of, *adjustment*, *development*, *adversity*, and *rationalisation* (see Figure 4.1). These themes reflected overlapping temporal phases in the transition experience.

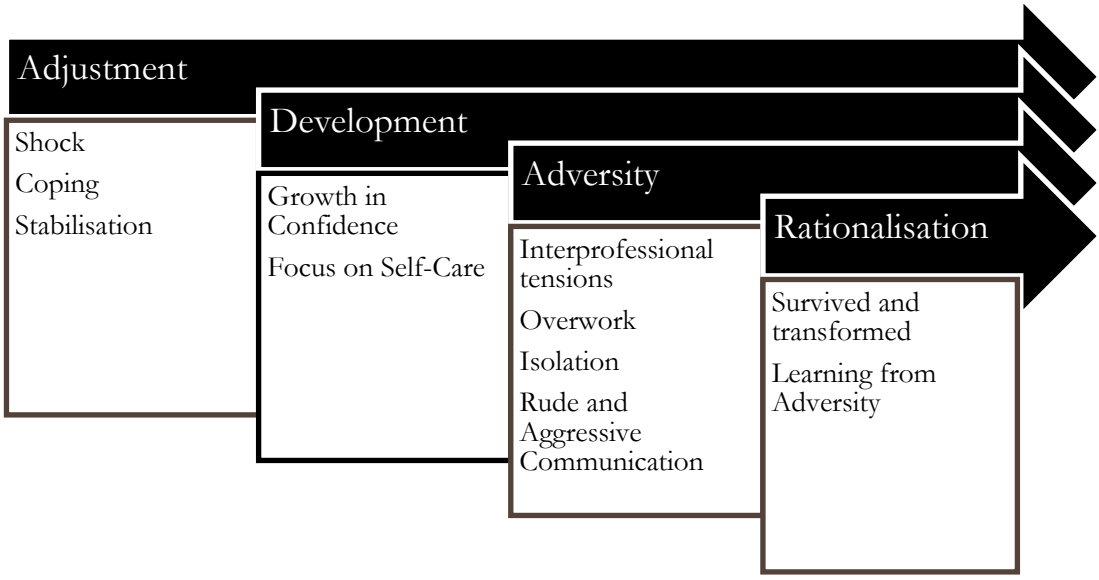


Figure 4.1: Superordinate themes and their subthemes (study 2)

Commencing work provoked an emotional response from participants, and prompted compensatory actions and dependence on others in the workplace. In time, participants became more comfortable in their roles; however, fulfilling the requirements of the job sometimes entailed their acceptance of challenging working conditions, lack of support and difficult workplace interactions. Finally, from their perspective at the end of the year, participants reflected on their role, and on their personal evolution.

4.3.1 Adjustment

This theme was comprised of subthemes of *shock, coping* and *stabilisation*. Many participants experienced negative emotions, including anxiety and self-doubt during the early phase of commencing practice. Support was appreciated, and some dysfunctional coping strategies were employed to fulfil workplace expectations. Participants' critical gaze at this stage was predominantly inward looking, focusing

on themselves and their performance. As time progressed, their initial fear and anxiety abated as they became more comfortable in their new role.

Shock

Words such as *terrifying, overwhelming* and *very stressful* were used by participants to describe their early days as a doctor. Most participants experienced fear and anxiety to varying degrees in the early days. Contributory factors included, their new responsibility, role uncertainty and fear of making mistakes. Feelings of inadequacy and stress were provoked by a lack of preparedness for practical skills, and lack of familiarity with the clinical environment or the IT (information technology) system. Communicating with senior doctors on other teams to request scans or consults, and having the relevant information for them in a concise fashion was a challenge for which some felt unprepared.

'I suppose it was terrifying really, the first week was absolutely terrifying and everything was a challenge at that point, from taking bloods to cannulas to prescribing to being called to a sick patient and having to assess them, everything was hard at the start' (Jane)

*'I had never put in an *NG tube until my first weekend on call here, and that was really stressful. I tried to do it like 7 times, and I was lucky that I had a patient that was willing for me to try, but that was stressful.' (Irene) *nasogastric tube*

'[Getting] consults for the patients ... that is a bit of an art I think .... if I had a better idea of how to do that before starting it would have been a little bit less tricky because nobody wants more work so when you are ringing somebody about a patient you need a very clear idea of why you are ringing them' (Brian)

Most struggled initially with prioritisation of workload and the unique pressure of the bleep system, especially when they were on call at night, which was stressful and sometimes overwhelming. They soon realised that their initial strategy of attempting to comply immediately with all of the competing demands placed on them was futile, and this contributed to their stress. Helen's inability to comply immediately with all of the demands on her time provoked feelings of inadequacy and guilt.

'Responding to calls on your own and being overwhelmed by bleeps and not being able to triage things effectively is really and can be really quite overwhelming' (Gerard)

'Maybe, maybe naively I did go in to on call, did try and keep everybody happy and do exactly right by everybody and that probably led to a lot of stress in the early times being on call because not only would I not be going to someone who called me but in my head I would be feeling really bad and really guilty about that.' (Helen)

During this initial period, Helen and Irene in particular, struggled with intense feelings of self-doubt and uncertainty, worrying that they were unique among their peers in their struggles, which they found isolating and demoralising.

'I presume everyone had shaky moments at the start, but, it can kind of feel a little bit isolating too, when you think, everyone is flying around, buzzing around getting everything they need to get done, and if you're having a tough day…, you can start to kind of get, … doubtful and then that can kind of make you feel less sure of yourself' (Helen)

'All those skills, like cannulas and bloods, I really struggled with that, especially in my first job. I felt that it took me longer than other people, to, to get the hang of it. I was always having to call for help in xxxx … it was really demoralising initially, because I thought I would never get it.' (Irene)

Not all early work experiences were difficult. Andrew and Brian described a gentler transition which did not include these negative emotions, however both expressed frustration and disappointment that their first job did not require them to assume responsibility.

'So, very little sort of using your brain, but it was an ok one to start off on for maybe the first 6 weeks until you realise this is actually not medicine' (Brian)

'There was no expectation at all that you would assess a patient or examine a patient… there was no thought involved in it' (Andrew)

Coping

Coping strategies in the early weeks included working longer hours, missing breaks to fulfil their obligations and depending on others in the workplace for support and guidance. Their nursing colleagues were crucial sources of early support.

Participants felt reliant and dependent on them and willingly accepted their direction without question.

> *'And again, coming in earlier and getting it done so you wouldn't be delaying the surgeons' (Claire)*
>
> *'I used to like not eat during the day on the day job because I would be like, I had so much to do.' (Mark)*
>
> *I think at the beginning .. they are your best allies and I think you lack confidence in yourself, so you do whatever they say. If they say jump, you're just, ok how high (Faye)* (on support from nurses)

All also acknowledged the benefit of integration, camaraderie and support that derived from a team structure and the solidarity of other interns was greatly valued.

> *'I suppose there was always people around during the day ..so during the day is fine I have no worries about being supported during the day.' (Brian)*
>
> *You could draw a lot of support from your* [intern*] colleagues ..when I talk about missed cannulas or not being able to do an *ABG .. they were the first people you went to and they were always there to help you. (Hannah) (**arterial blood gas test)

Stabilisation

The initial negative feelings of shock abated with time. This marked the transition to the next phase of the experience for participants

'You have to go through three or four months of ... it can be a bit turbulent at times .. [when] you're out the other side, .. you can relax a bit more in the job.' (Hannah)

'I was afraid of making mistakes, that I was going to hurt someone, but then that eases off ... gradually you get a little more confident as you go along' (Jane)

4.3.2 Development

This superordinate theme was comprised of subthemes of *growth in confidence* and *focus on self-care*. After the initial adjustment period, participants continued to evolve. This resulted in increasing confidence and competence, and a change in some of their earlier attitudes and perspectives.

Growth in confidence

As the year progressed, participants continued to adapt to their new roles, becoming more competent and confident with experience. Their increased confidence was characterised by their assumption of increased responsibility, making clinical decisions and prioritising their workload.

'You know what to prioritise.. I think I have become a lot more efficient' (Andrew)

I think for me that was the active point of transition where I went from just blindly following orders .. to actually employing my own clinical judgement (Gerard)

'Over time you just become more confident in what you can do' (Eugene)

Gradually their own requirements for support lessened and their attitudes towards asking for and receiving help changed.

'I would have looked at asking for help a bit differently early on .. kind of felt a bit bad about having to ask..now I realise, I have brought this to where I can bring it, I can go no further and part of your job almost is to get further help' (Hannah)

*'A lot of the time now when I ring the reg. you can have all the bloods sent off you can have the chest xray ordered, you can have gases done and stuff .. at least then you will look somewhat competent ... as opposed to ringing them and going I have no idea what to do' (Brian) *registrar= senior resident*

Focus on self-care

Whereas in the early days of transition many participants had not prioritised self-care, their perspectives changed with experience.

'It was logical that on long days, 10 or 12 hour shifts when you are run off your feet that you are going to be hungry ... it was about teaching myself that I needed to stop ... to take a break even if it was only 20 minutes or something .. because I would work better after that' (Jane)

Others also recognised the importance of maintaining a work life balance, for some, their experience influenced decisions about their future careers.

'Keeping up hobbies and things outside work .. that has been really important to me. seeing friends and talking with them .. It is important to take your mind off things' (Gerard)

'I wouldn't do surgery for a living myself .. seemed like a fairly punishing lifestyle' (Andrew)

4.3.3 Adversity

This superordinate theme was comprised of subthemes of *inter-professional tensions, overwork, isolation*, and *rude and aggressive communication*. After their initial adjustment to the clinical environment, as participants continued to develop, their relationships with their nursing colleagues began to change as they progressed from their earlier dependent position. During this stage, their main focus shifted from their own abilities or shortcomings, to exogenous workplace stressors. Although not a constant feature of their experience, all described difficult and challenging times, when they felt overworked, unsupported, or subject to difficult workplace interactions. Participants accepted and endured these difficult working conditions.

Inter-professional tensions

As their first year of practice progressed, participants learned to prioritise. Rather than simply complying with all the demands placed on them, they became more assertive. This sometimes resulted in tensions developing with their nursing colleagues.

'I suppose you evolve as an intern, you kind of distinguish between what they think should happen and what you think should happen' (Claire)

'I suppose the nurses are more of a challenge now whereas probably at the beginning I would have done, whatever they said, I did, because I didn't know whereas now you are questioning them more and it is a little bit more of a challenge.' (Deirdre)

Faye addressed what she perceived as the strong division between first year doctors and their nursing colleagues, relating this, in part, to their different working practices.

*'I think there is definitely quite a strong division between doctors and nurses that is inevitable, I think. .... Like they have no consideration, they are on a ward and they look after their ward and they look after their room and they know their patients well. They have no kind of notion of the fact that you could have patients on every ward of the hospital and you are up and down you know, they just see their patients in front of them you know…. they could bleep you and say I have such and such daughter here she wants to meet you and like I am in the middle of a patient that is *desaturating and I am trying to put in a chest drain and they won't care and then they will document it 'wouldn't speak to daughter'. (Faye) *a reduction in oxygen levels in the blood*

Many participants were critical of how their nursing colleagues used the bleep system. This included, the constant nature of the calls, their tone, which was often

perceived as pressurising and demanding, and the numerous non-urgent requests from nurses, especially on call when they are often very busy.

'I was on call, I was being called to discharge somebody every 5 minutes for about an hour, bleep going off .. And they're getting angry with you ..., because the patient is getting angry with them, but you physically just don't have time. And that's where things start to get a bit strained I suppose.' (Noel)

*They have just decided .. they need a repeat *potassium at 2 in the morning. It's not necessary a lot of the times. ..there is no point arguing with them because they are just going to keep bleeping you. I have to pick my battles, if I'm really busy then I will just say I can't do it, it's not urgent but if I'm not that busy I would just go do it because it's about picking your battles. (Irene) *blood test*

Some participants also struggled with what they perceived as a devolving of responsibility for a patient to them by the nurses, while others felt undermined when nurses would contact senior doctors if they did not respond quickly or appropriately enough.

'And there is nearly a sense of they're all about defending themselves and all about, 'bleeped doctor up, never came' you know, there will be no explanation from the doctor documented afterwards, just, 'never came' you know, they are really out to protect themselves and everybody senses that'. (Faye)

And I told the nurses, 'she's fine, you don't need to give her fluids, she's sleeping, and she's fine'.... What annoyed me was she went over my head and rang the SHO and they said ok just give her a bolus. (Irene) (senior house officer)*

Gerard and Jane however, contended that nurses are generally more experienced and are therefore entitled to question interns, or seek higher authority, and, that jobs, perceived as trivial by many interns, could be valuable learning experiences and are also important to the patient.

'There is a reasonable lack of maybe trust or faith when you start off in a job ..I can completely understand that and I wouldn't take offense at all.' (Gerard)

'That is just part of being an intern I think..You are the first port of call and you are the first person to decide is this trivial or is it not… it is only by seeing those as well that you learn what actually is trivial and what is not…. It is important to the patients as well .. if they are worried about something .. it is good to reassure them and things'. (Jane)

Overwork

Most participants had experiences where their working hours and or their workload caused them to feel overwhelmed. 'Constant bleeps' was a common theme among participants, resulting in them feeling frustrated and overwhelmed. They sometimes found it difficult to take breaks, especially on call, as the volume of work and calls could be unremitting. In spite of the challenging nature of the working environment participants accepted and complied with the demands placed on them.

The negative consequences to participants own health and wellbeing, due to long hours and high work intensity included extreme fatigue, irritability, and emotional lability. Concerns were also expressed about diminished empathy, feeling demoralised, and the possibility of burnout.

'It was so busy. It was horrible, it was just constantly, my bleep, …… But that was very overwhelming. And you felt, at the end of the shift I felt so emotionally drained I felt that I was going to cry, not from just being upset but from the emotional exhaustion of it you know?' (Irene)

'Towards the end of the week I was crankier like, … like "why are you ringing me about this?" .. I suppose I was just tired … maybe a little bit demoralised you know, God it's hard to face … like five nights is enough, … Seven was a lot.' (Andrew)

'When you are tired sometimes it is difficult to muster empathy for patients and that's meant to be the core of the job you know so it's a bit so you feel like that's been chipped away a little bit.' (Brian)

Faye felt there were occasions when her performance was impaired, potentially compromising patient safety.

'You're hypoglycaemic. You're overloaded with work. You're completely not performing to your best and you slow down and then your job ends up longer because you are doing it slower so it is horrendous ..and you are not even thinking straight. I have been on call where I have put my own date of birth on blood bottles because I cannot even see or think?' (Faye)

Gerard aspired to being able to function on little sleep like senior doctors that he witnessed during the year.

'It's inhuman to be up at those times and it's not natural to be sharp at those times, .. but I see then how the med reg. approaches a problem at four o clock and they are so on the ball even if they are not feeling on the ball and I think that I would take solace in that you know, eventually you see these patterns so frequently that it becomes second nature to you whether you are awake or half asleep.' (Gerard)

Isolation

Although in general, participants felt supported, there were times when this was not the case. Most participants admitted to occasions when they felt isolated and alone. Support could be variable depending on specialty, individual asked or time of the day. The general perception was that they were more exposed and had less support on call. Some had the experience of not trusting the support immediately available to them, which led to them feeling compromised and vulnerable.

'With surgery, you're thrown in the deep end, because, you know, all the team goes off the theatre for the day, and unless there is something like a massive, massive emergency, you don't want to go up and interrupt a theatre.' (Noel)

'I think it is lonely, you are on your own depending on what Regs you are on with, some of them are very helpful and will come and help you when you need it, others are a little slower..' (Deirdre)

'And you ended up not trusting the person you're calling which then undermines why you were calling them in the first place.' (Noel)

Most participants recounted episodes where they had difficulty accessing support in spite of requesting it, which caused them great distress.

*'Yeah, there was one night that I think will always haunt me, ... we had a really sick patient…and I rang the surgical reg .... [*she said*], I'll be in A&E for another hour… you end up pleading like, please, I'm the only person, ...I remember feeling oh god, and I called the med reg, and I must have gone and ran an ABG* when she came and she left again, and still hadn't left a load of instructions, so I rang her again and she was like, I'm not coming 'till your surgical reg comes .... at 2 o'clock in the morning you're like, can somebody else just come, and I ended up ringing anaesthetics and they came, and got everyone in line I thought, and I remember thinking that night, god it's just me... But I remember feeling very unsupported that night, ... he ended up having to be taken to ICU and I just remember that, because I think I kind of cried after that, ...thinking, god, is this what it's going to be like every night?' (Claire)*arterial blood gas test*

'I suppose panic and stress initially and then quite frustrated because feeling it is not fair on the patient that they shouldn't be left in a situation where they are sick and I don't know what to do and the person who should know what to do isn't going to come and see them. Frustrated for myself as well because you are told in medical school oh don't worry you won't ever be left in a situation where you'll had to deal with something'(Jane)

Rude and aggressive communication

Participants were vulnerable to interactions with senior doctors that could be very challenging when they had to contact other teams to request consults or

investigations. They were making these requests on behalf of their team and feared a negative reaction if they were unable to comply. Participants coped with this pressure by being as prepared as possible for any potential questions that they may be asked, and accepting, rather than challenging, any negative or hostile reactions.

> *'I remember ringing for consults there, sometimes you feel like afraid, because you wouldn't know what form you'd find the other person on the phone, and you try and have everything out in front of you, that they could possibly ask.' (Claire)*
>
> *'You can't physically force someone to come and see your patient, and .. [*the Consultants]..*they just see it as, 'I wanted this done and it wasn't done'. Which is so frustrating when you're trying so hard to get something done and it just doesn't happen and you're kind of worried on the round?' (Irene)*

The interactions could be quite unpleasant, and distressing.

> *'I remember contacting an anaesthetist ... I was told to contact him and he was going 'why is an intern contacting me? Your Reg needs to contact me' and *bang' (Deirdre) *he hung up the phone abruptly*
>
> *'One of the interns was brought to tears by a Radiologist and was furious with herself and didn't do it until after she had left but it was just unnecessary really ... and you know interns generally get the brunt of that kind of thing I suppose which is unfortunate.' (Mark)*

Participants described how they accepted mistreatment directed towards them, with Noel perceiving organisational tolerance towards it. Some excused the negative

behaviours directed at interns when they requested investigations or consultations on behalf of their teams.

'You just learn to live with it' (Jane)

They do this sort of thing all the time , they get away with it, it's never really challenged properly' (Noel)

'I think there is always the odd person you come across who has a reputation for being quite stern and quite harsh but I just think you have to let it wash over you, everyone has bad days, radiology are some of the most in demand people in the hospital and they deal with an awful lot of nonsense, so it is reasonable to assume that they think that you coming at them with another stupid request.' (Gerard)

4.3.4 Rationalisation

This superordinate theme was comprised of subthemes of *survived and transformed,* and *learning from adversity.* This final phase is characterised by a retrospective positive evaluation of the transition, an acknowledgement of the learning opportunities in the challenging aspects of the year and a recognition of personal evolution over the course of the year.

Survived and transformed

From their perspective at the end of the year, the most commonly held overall impression was that it was an enjoyable experience.

'I suppose good and bad I suppose. Overall a good year in terms of I learned loads, got great experience. It was stressful at times and there was kind of times I felt I was in over my head and things like that but overall it was good and it was great to get such a good learning experience and definitely compared to when I qualified it was just such a big difference like and even my confidence in doing things and things like that so yeah I suppose overall good but that is not to say that it was an easy year but it was good.' (Jane)

'Yeah I enjoyed it, yeah I liked it and survived it' (Mark)

Reflecting on the early transition period, initial sources of fear and apprehension seemed much less significant. Participants recognised how they changed over the course of the year.

'The things that worried me back then, now seem a bit silly. Just literally I was so ridiculously stressed about putting in a line, which now I can do in my sleep, so that's great.' (Irene)

'So I suppose yeah it has been a massive transition, I don't think I would recognise myself if I saw myself approaching a patient back in July now, thank god, because I remember the first person I was called to, I was absolutely flatfooted.' (Gerard)

Helen described how this evolution has not been linear; some challenges can still knock her confidence.

'And like you know even now it's not always rosy now you do have you have long days or weekend days or whatever they are that are tough and it kind of brings you back to how you felt at the start but at least it's only once every so often now. Whereas at the beginning it was a more regular feeling when you were doubting and not sure of yourself. And then you thought you were the only one who wasn't sure. Yeah a lot more uncertainty in the beginning' (Helen)

Learning through adversity

In describing their evolution as more resilient, competent practitioners, many participants acknowledged the role played by the more challenging aspects of the job in the development of this resilience and competence. Intense workloads, acutely ill patients, and working out of hours, although often stressful and anxiety provoking at the time, were now evaluated as important and valued learning opportunities.

'The pace was so much faster. It was a little bit overwhelming at times, ...but I, actually I think I prefer it like that, because you just get, like, more efficient with dealing with things, and learning to do things quickly.' (Irene)

'So it very much learning on your feet but as terrifying as it is at the time it is nearly the best way to learn.' (Jane)

Participants also worked in jobs that were less busy, had a large administrative component or involved taking less responsibility. Many expressed concern due to the

lack of learning opportunities within these posts. Irene compared her experience to that of other interns and feared that her learning experiences had not been as good.

> *'I do tend to compare myself with other people who have had more experience. Like some people have had experience dealing with more sick patients, and I envy that because I still feel that I have a long way, a long, long way to go.' (Irene)*

4.4 Discussion

4.4.1 Principal findings

My interpretation of how participants made sense of the experience of transition, revealed overlapping temporal stages, congruent with much of the extant literature regarding transitions and organisational socialisation. The resulting enhanced knowledge of this important time, will inform stage-appropriate interventions to ease the transition. The early transition period was characterised by a high degree of anxiety regarding competence and performance. Support eased the experience, and some dysfunctional strategies were employed to fulfil the requirements of the role. With time, participants gained competence and confidence, and their focus turned from a preoccupation with their own performance, to workplace expectations and interactions. From their perspective at the end of the year, they recognised how they had evolved and challenges faced were minimised and reframed as learning experiences.

4.4.2 First impressions

The early experience of a newcomer to an organisation is characterised by sense making and coping, and is often termed ‘reality shock’ or ‘transition shock’. Factors that contribute to this, are a disparity between job expectations and the reality encountered (surprise), the degree of change (the objective difference between previous and new roles), and contrast (subjective difference as perceived by the individual) encountered (110). Fear and apprehension were prominent early emotions in this study, resonating with existing research on medical graduates’ transition to practice and reflecting the degree of surprise, change and contrast experienced by participants in their new role compared with their previous role as medical students (4, 13).

Participants’ expectations of how they should perform did not include any allowances for the early transition period. High personal expectations, and concerns regarding competency increase the stress of the transition (2, 4). Residents are known to fear personal inadequacy and failure, and these negative emotions can result in unfavourably comparing themselves with others, with further negative self-evaluations (19). Helen and Irene in particular, experienced substantial self-doubt and inadequacy, comparing themselves with their peers who they perceived to be coping better, and described feeling isolated and demoralised.

To reduce the inevitable anxiety associated with a new job, individuals are motivated to learn the functional and social requirements of their new role (243). Participants described using dysfunctional strategies to compensate for perceived inefficiency, working longer hours and taking fewer or no breaks. This reflects the pressure on novice doctors to ‘keep on top of things’ (220) and perhaps the common assumption in medicine of doctors as ‘supernaturally resilient’ (244). A more positive coping

strategy was participants' support seeking from workplace relationships to ease the stress of this early transition period. Access to insiders is very important for newcomers, as they can provide the context-specific experiences that newcomers lack, helping them to make sense of their new reality and facilitating enhanced understanding of their new environment (243). Adequate supervision and support for new doctors is especially important in the early days (66, 245). It impacts on feelings of preparedness for transition (9), improves work related wellbeing (50, 64), creates a positive working environment and reduces the stress around transition (6, 79). The support and sense of integration within a team structure was greatly valued if occasionally variable. Integration within a team structure reduces the stress of the transition, improves work related wellbeing and enhances the clinical learning environment (11, 50, 59, 60, 64-66, 74, 220, 246).

4.4.3 Relationships with nursing colleagues

The early reliance on nursing colleagues by doctors commencing clinical work in this study is not a novel concept (64, 66, 246). Nurses play an important but often unacknowledged role in the socialisation of new doctors (247, 248). Senior nurses have indicated that they feel that medical residents are placed in a high-responsibility role with inadequate support, leading to patient safety implications, and thus respond in the early transition period with helping behaviours, as is evident in this study (249). A noteworthy element in participants' early relationship with their nursing colleagues was their initial vulnerability and willingness to accept direction from them without question, as they acclimatised to their new roles. This resonates with Burford et als' 'pragmatic hierarchy' where the experience and expertise of nurses carries an authority to which participants were initially happy to defer (247).

Although they seemed more open to collaborative practice initially, time and experience in the clinical environment appeared to diminish rather than enhance this. Participants began to critically appraise the requirements of their role and many disparaged the volume, nature and frequency of calls by nurses to them, especially at night or on call, resulting in tensions becoming apparent. It is acknowledged that healthcare is best delivered by inter-professional teams (250, 251); however, issues with inter-professional collaboration are not uncommon (251-253). Resonating with this study, a number of cultural and organisational factors have been described that inhibit collaborative practice. Doctors and nurses appear to identify primarily with their own teams, and only secondarily with the inter-professional team, illustrating the 'tribal behaviours associated with the discrete cultures of the different professions' (251, 254). Their individual work practices differ substantially, while nurses generally work as a team, and are ward based with a set number of patients in their charge, junior doctors work as 'inter-professional isolates' as they care for a variable number of patients, situated on different wards, often with limited senior support and are only transiently present prior to moving to their next job (251). This disparity is clearly evident in this study.

The power relationship that exists between doctors and their nursing colleagues may also be a barrier to effective collaboration and communication. It has been suggested that doctors rely on the imposition of a 'sovereign' authority derived from the medical hierarchy, with a 'command and control' model of leadership, which does not lend itself to collaborative work. The authority of nurses, originates in their control of the ward and knowledge of formal ward policies and this is exercised via subtle resistance to the power of doctors (250). In addition, some participants felt undermined by their nursing colleagues at times. As the 'emergent identity' of junior

doctors can be affirmed or disaffirmed by others in the workplace, friction can result if other healthcare professionals such as nurses do not see them as experienced enough to claim the authority they desire, or if nurses' expectations of the junior doctor are too high (255, 256).

4.4.4 Workplace Learning

The performance of doctors when they commence clinical practice is known to be highly situated and relational within each clinical context (92), and can be approached as 'an opportunity for rapid personal development' where doctors develop coping skills to deal with challenges encountered; 'a critically intense learning period' (4, 5, 92). Doctors' workplace learning during the first year has been described in terms of a transformation over time, ideally leading to the development of competence and confidence (255). This resonates with our understanding of transition as a dynamic process leading to progression and change (2).

Reflecting the views of participants in this study, opportunities for learning are highly valued by junior doctors (4, 50, 69), are associated with improved feelings of wellbeing and confidence (50) and appear to have a protective function against stress (79). Although, from their perspective at the end of the year, the doctors in this study maintained that their professional development was enhanced through adversity, 'handling the responsibility and learning from the process' (2), care must be taken that they are 'stretched but not overburdened' (246). Excessive responsibility has been described as a two edged sword, while good for learning, it can be deeply anxiety provoking (64).

However, it is clear that a disparity still exists in some jobs between service delivery and a commitment to training (6, 59, 72, 246). Trainee doctors can spend substantial

time doing work of limited educational value, with a high administrative content (257-260), rather than time at the bedside in direct patient care activities, which is an important aspect of experiential learning (261). Indeed it has been suggested that the mundane nature of some clinical posts contributes to stress and can mean that it is a year of endurance rather than of development (34, 66). We know that limited training can contribute to feelings of detachment among trainees (262) and that resilience is greater when work has meaning (64).

Finally, a successful transition is marked by integration, competence, confidence and commitment (112, 240). It is noteworthy that, in spite of the various adverse working conditions described in this study, as their first year of practice neared conclusion, participants recognised how they had evolved, especially compared with themselves as newcomers and, insiders now, they appraised the job positively in retrospect. Earlier difficulties were downplayed to some extent, and they evaluated the more challenging aspects of their year as valuable learning experiences, potentially indicating an element of denial of any difficulties encountered (61, 64, 66). It has been suggested that doctors tend to trivialise or normalise their experiences of stress as a form of impression management to demonstrate professionalism (263). This attitude has the potential to maintain negative workplace culture for future residents (130). Participants, in their acceptance of the negative circumstances of their new roles, by maintaining a ‘custodianship’ position, potentially preserving the status quo thus maintaining existing negative workplace cultures (243).

4.5 Conclusions

This study reveals overlapping temporal stages of the transition experience for new doctors, which will inform stage appropriate interventions to ease the transition. It also highlights, both the positive contribution of nurses to doctors' early socialisation and the diminution of inter-professional collaboration as the first year of practice progressed. The retrospective trivialisation of the difficulties encountered during the transition as is evident in this study is noteworthy. These themes and their implications for practice will be discussed in greater depth in chapter 7: Discussion.

Chapter Five

5. Discord and Disempowerment; a longitudinal study of the experience of intra-professional mistreatment during the transition to clinical practice

5.1 Introduction

The transition to clinical practice has been described as a 'critically intense learning period' involving the newly qualified doctor engaging with their workplace and establishing working relationships with others (92). During this time, they will relate to, interact with, and become a member of a number of different groups of doctors within the clinical environment. Collegial interactions between doctors are associated with increased job satisfaction (264, 265) and, integration, support and peer networks promote wellbeing and ease the transition for new doctors (6, 19, 64, 65). However, the relationships of new doctors with other doctors in the workplace are not always positive and can be complicated by factors such as status, hierarchy and new doctor's need for support.

Mistreatment of residents is acknowledged as being pervasive in medical education internationally (93, 96, 98, 101, 233, 266-268). Residents report experiencing and witnessing a range of abusive behaviours including bullying (96, 99, 269, 270), intimidation and harassment (93, 94, 233, 271), belittlement (268), and rudeness (272, 273). Being a target or a witness of this behaviour negatively impacts on physical health and wellbeing, with reports of psychological distress, post-traumatic stress disorder, professional demotivation, burnout, dissatisfaction with the job and with training, and thoughts of leaving (94, 103, 233, 245, 266, 267, 273-285). Patient

care is adversely affected, with an increase in errors, disruption to collegiality and communication, diminished teamwork and morale, and lower adherence and compliance to the introduction of new policies and practices (94, 103, 233, 245, 266, 267, 273-285). Community of practice theory describes learners actively engaging with, and acquiring the identity associated with the community, who exert 'a compelling social influence on its members' (108, 234, 286). Residents may assimilate the negative behaviours they are exposed to via the hidden curriculum and themselves become perpetrators, continuing a legacy of abusive behaviours (278, 287, 288).

Residents report being the targets of mistreatment most commonly (100). Hierarchy and status are known to be contributory factors, with senior doctors commonly cited as perpetrators of this behaviour towards medical students (230, 289) and residents (93, 100, 274, 275, 290). Intimidation is part of the culture of medicine and, with teaching by humiliation, may socialise students into the existing hierarchy. It has been suggested that acceptance of intimidation by medical students may indicate acceptance of the hierarchy, thus demonstrating their suitability for membership into the medical community (289). It may also result in students hiding what they don't know or afraid to ask questions or to question authority (220, 289). In the clinical setting the supervisor-resident relationship is an important factor in the ensurance of effective supervision and hence patient safety (291). Communication with senior doctors has been rated as a more important skill for out of hours work, by medical students and residents, than either communication with patients, or with nurses (208) and medical mishaps are commonly linked with communication failures (292). One aspect of the supervisor-resident relationship involves the resident actively requesting help. However, residents can feel pressure to demonstrate competence

and worthiness to become members of the profession and may perceive these encounters as evaluative in addition to furthering teaching and patient care (293, 294). The psychological safety of the clinical environment refers to the perception by residents that they can engage in behaviours like support seeking without fear of adverse consequences. An environment where residents are humiliated or otherwise mistreated diminishes perception of psychological safety and may result in avoidance behaviours and fear of speaking up or seeking support (279, 295) with quality of care and patient safety implications (296).

Therefore, negative interactions between newly graduated doctors and other doctors in the workplace, have consequences for patient care, impact on residents' experience of commencing clinical practice and on their health and wellbeing, and may also influence their future behaviour towards others, potentially perpetuating negative behaviours. It is acknowledged that in spite of decades of reports of medical trainee mistreatment, it continues to be an issue (297, 298). Persistent reports of medical student mistreatment over a 13 year period in an institution that had taken a proactive approach to tackle it, highlights the complex nature of this problem (299). Much of what is known about resident mistreatment arises from quantitative research reporting mistreatment of residents at the hands of senior doctors (15, 98, 103, 233, 267, 268, 270, 274, 275, 300), with fewer studies exploring these experiences in more depth.

Some qualitative studies have been carried out that add to this attitudinal information. These studies have focused on aspects of intra-professional relationships in the clinical workplace, for example negative communication between doctors, exchanges between residents and consultants perceived as significant by residents, or an exploration of the affective relationships between

senior and junior doctors in the context of power and hierarchy. These studies used focus groups, a written open-ended question, and interviews of doctors of various levels (273, 301, 302). Themes revealed include contributory factors to mistreatment such as workload, lack of support, patient safety, medical culture and hierarchy and the adverse emotional and professional impact of this behaviour on the victim (273, 301, 302). An exploration of the lived experience of newly qualified doctors with respect to their experience of mistreatment by other doctors in the workplace has not been carried out. This would provide further insights into these very important relationships over the course of the first year of commencing practice and would inform interventions to mitigate the mistreatment that is pervasive in medicine.

My preceeding studies have identified some issues regarding participants' anticipation and experience of relationships with other doctors in the workplace (ref ch 3 and 4). Therefore, I wish to explore the experience of recent medical graduates from prior to commencing work, through their transition to practice during their first year of being a doctor focusing on their experiences of mistreatment in their interactions with other doctors in the clinical environment. To achieve an in-depth longitudinal analysis of their experience over time I follow the experience of three graduates over the course of the first year.

My research question for this study is: What is the lived experience of intra-professional mistreatment in the workplace from prior to commencing practice through the first year of being a doctor?

5.2 Methods

5.2.1 Recruitment

The data from three participants from my earlier studies were reflexively selected to answer my research question. The purposive recruitment of participants for this project has been described in chapter 3.

5.2.2 Data collection

A prospective longitudinal design was employed. This involves more than one data collection from each participant, over a time period sufficient to capture and illuminate change (303). Longitudinal qualitative research is becoming more common in medical education and has been used to prioritise and clarify the temporal aspect of a phenomenon, for example to analyse professional identity formation in medical students (303-305). Qualitative longitudinal research can achieve an in-depth nuanced understanding of lived experience, incorporating change, evolution or stability over time (303, 306-308). In my study, it facilitated an exploration of the temporal evolution of the experience of transition, reflecting an awareness of it as dynamic and changing over time and enabling an exploration of the sense-making process of the individual and their response to the temporal nature of the experience (306, 309). The hermeneutical underpinnings of IPA recognise temporal location and the subjective contextual nature of change as fundamental to understanding and interpreting experience and this aligns well with qualitative longitudinal research (307, 309).

As described in my earlier studies, in chapter 3 and chapter 4, participants took part in a semi-structured interview prior to commencing practice, with respect to their experience of anticipation of starting work and, they took part in a second semi-structured interview at the end of their first year with respect to their experience during their first year of practice (Semi-structured interview guide- Appendix D). All participants were also provided with an audio recorder and invited to keep audio diary recordings at home to capture their experience during the year. An analysis of the longitudinal dataset of three participants was carried out to facilitate an in-depth exploration of lived experience with respect to my research question. The decision to focus on the datasets of only three participants was made in consultation with my supervisors. A large amount of data had been collected, analysis of which would potentially inhibit the in-depth, idiographic exploration that we wished to achieved.

5.2.3 Data analysis

Data was analysed using interpretative phenomenological analysis as described in chapter 2. Following close reading of the transcript, experiential themes were identified, and then grouped into clusters of themes addressing related issues called super-ordinate themes. The dataset of each individual was analysed fully prior to moving onto the next case. When all data was analysed, integration of themes across the three cases was carried out and commonality and divergence were noted. I met regularly with my supervisors, DB and POL during analysis to discuss the process. We supported each other's reflexivity and kept reflexive diaries throughout the process.

5.3 Results

Table 5.1 illustrates the data collected via interview and audio diary recordings from each participant.

Table 5.1: Participant demographic and durations of recordings

Participant	**First Interview**	**Audio-diary (1st job)**	**Audio-diary (2nd job)**	**Audio-diary (4th job)**	**Second Interview**
Claire	36m32s	14m8s	5m33s	8m2s	63m34s
Faye	52m08s	10m57s	10m	/	58m33s
Noel	59m47s	27m	/	7m	83m26s

The relationship and interactions Claire, Faye and Noel had with other doctors significantly influenced their transition experience. To put their experiences of intra-professional mistreatment in context, here follows an initial brief overview of their experience over time, with respect to their relationships with other doctors:

Claire, a 22-year-old graduate who had entered medical school directly from high school, was anxious to 'fit in', both with the team, and all the doctors in the workplace. She anticipated that this would ease her transition and also make her feel more comfortable asking for help. She had an idealised view of the team structure and was confident of the support of her intern colleagues, many of whom were known to her. Claire's experience, as revealed by her audio diaries and end of year

interview, was of positive team integration and support from other interns. There were stressful times however, when she had difficulty getting support from more senior doctors while on call, and she had a number of very distressing interactions with senior doctors from other departments while carrying out her team's instructions. Although shaken at first, over the course of the year she described herself as becoming less sensitive to these verbal attacks.

Faye, 26 years old, studied medicine as a graduate entry student. She did not attend the local university and felt that, not knowing her intern colleagues, might make her transition more challenging. Like Claire, she hoped to integrate well with her team, and expressed discomfort about seeking help from senior doctors. Referencing her low position in the medical hierarchy, she did not anticipate actively challenging any negative behaviour from others in the workplace. Faye's experience, as revealed by her audio diaries and interview at the end of the year, revealed a positive relationship with her intern colleagues and integration within her teams, albeit with difficult working relationships with some team members. Echoing Claire's perspective, she had mixed experiences with support from more senior doctors on call, and found that negotiating with senior doctors from other departments on behalf of her team was also a challenge. This, she perceived, was due in part to her low position in the medical hierarchy. Over the course of the year she became more comfortable asking for senior support. As she had anticipated however, she did not challenge unprofessional behaviour directed towards her.

Noel, 22 years old, also entered medical school directly from high school. Noel was initially apprehensive due to the nature of his first job. He anticipated limited support from his team, and the Consultant he was due to work for had a reputation for being difficult. He expected support from his intern colleagues, and hoped that support

would be forthcoming from others also. Noel's experience was that he did find team integration in his first job more difficult, in addition, he was exposed to a tense workplace culture where an atmosphere of fear dominated. Like Claire and Faye, he had mixed experiences of support from senior doctors on call and he too had distressing interactions with senior doctors from other departments, as he carried out his team's instructions. He perceived a high degree of organisational tolerance for this behaviour. Like Faye, Noel emphasised the importance of not being afraid to seek support or not to be put off by a negative response from those charged with providing support.

The superordinate themes that were identified from the data were *Discord* and *Disempowerment.* Prior to the transition to practice, Claire, Faye and Noel had some apprehensions regarding their future interactions with other doctors. On commencing work, they described distressing experiences of having unprofessional behaviour directed towards them as they carried out the duties required of them, and also when they sought support. They also described witnessing unprofessional behaviour between other doctors. Whether they were a target or a witness, they did not challenge this behaviour. Their support seeking behaviour was adversely impacted as a result of negative responses by seniors.

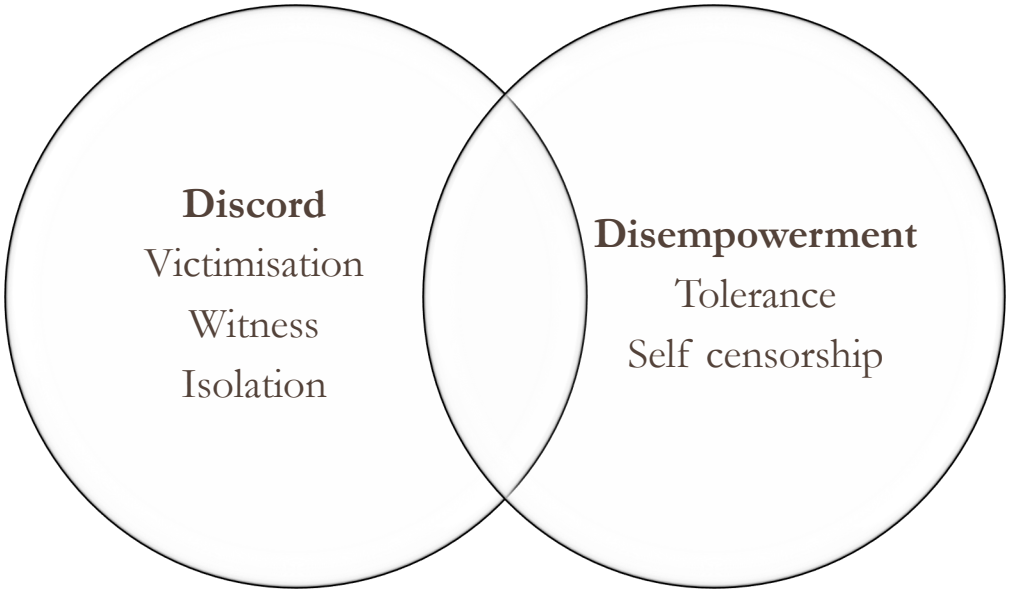


Figure 5.1: Superordinate themes and their subthemes (study 3)



5.3.1 Discord

This superordinate theme was comprised of subthemes of *victimisation*, *isolation* and *witness*.

Victimisation

Even prior to commencing work, Claire, Faye and Noel expressed some uncertainty and concern regarding their future relationships with other doctors, particularly those

from other departments, with Noel anticipating that this aspect of the job would be challenging.

*'I don't know what it's like to get on with [*doctors in*] other departments, hopefully it will be fine. It's more of a hoping it will be fine and not being entirely sure if it will … But that's like any job, that you just might not get on with someone. It's a concern definitely. I think that's because you're new, you want to fit in.' (Claire pre interview)*

'I'd like to think there wouldn't be bullying as such. I do think there will be people who will be difficult to work with, you know, clash of personalities, you know.' (Faye pre interview)

'Radiology is the one where I have heard can be troublesome at times (laughs) … trying to deal with them to get them to do stuff…' (Noel pre interview)

This proved to be the case on commencing practice, as Claire experienced unpleasant interactions with more senior doctors outside her own team when carrying out her duties, requesting consults or ordering investigations, which she described as *challenging*, *daunting*, *demoralising*, *intimidating,* provoking *fear* and *a battle or a plea*. Some individuals, she perceived, enjoyed causing distress to her. These interactions did not improve with experience.

'I remember ringing for consults there and sometimes you'd feel afraid because you wouldn't know what form you'd find the other person on the phone' (Claire post interview)

'You're being spoken down to and you're kind of like, I'm a person too and I have a medical degree' (Claire post interview)

'Like you know, it's like pulling teeth. Or like, they kind of make you feel stupid … I don't know why (laughs) … there is probably one or two personalities that may be enjoy it or whatever. Or they like asking you stuff to make you squirm a small bit or something.' (Claire post interview)

Noel also described being the target of verbal aggression and derision by doctors from other departments, in carrying out the duties requested of him by his team. He minimised the derision that he experienced compared with other mistreatment he was the target of. He perceived that his position in the medical hierarchy made him more vulnerable in these situations.

'The [Radiology] consultants were, some of them were less than professional. You know, swearing at you, you know, telling you to' get the f' out of their room, that sort of stuff' (Noel post interview)

'I mean, you know, there are times that you get laughed at, …I'm not doing it, and that's fine, at least they're being, at least they're not, polite, but at least you know, they're not swearing.' (Noel post interview)

'It is with consults where you sometimes feel as an intern you know you're hung out to dry, being asked to get a consult that probably .. is not as urgent as its being made out to be. And if you give all the facts as they are.. you are inevitably going to be given out to, depending on who you're calling' (Noel post interview)

Faye also cited her position in the medical hierarchy as a contributory factor in the *dreaded* challenge of requesting investigations from more senior doctors.

*'Going into Radiology is never fun (*laughs*) to discuss the need for a scan or whatever it is and again it will always land on the intern you know. The Reg can say oh that needs to be done today and you know you are going 'stop putting this on me'. I will try my best and then you are going down to a Consultant Radiologist who is no more going to say- 'no problem I will do that today for you no problem Intern that is no bother let me make that the priority of my list'. All you can do is your best. I think that is probably one of the most dreaded jobs as an intern is going to Radiology to try and get something brought forward or whatever it is, yeah, it is rough.' (Faye post interview)*

Isolation

Claire and Faye experienced anticipatory anxiety prior to commencing practice regarding seeking support, using terms such as: *awkward, uncomfortable, bothering people, fear*. They were apprehensive, and uncertain about how requests for support would be received. Claire felt that a good relationship with the senior doctor would make support seeking easier.

'Because if you are on call and you need to call someone, you won't feel as awkward being like sorry I'm calling you in the middle of the night. You know it's like if you get on with them it won't bother you as much to call them' (Claire pre interview)

*'I would like to think that if I'm unsure of something or I don't know what to do that it would be okay to run it by an *SHO or **Reg. ...so I would like to think that that would be available. I think it could be awkward. I think that I probably will feel like oh my god, I'm texting them again, I'm wrecking their head,... . I don't know how well that will be perceived by them if they are constantly getting texts from me saying is it okay if I do this.' (Faye pre interview) *Senior House Officer**Registrar*

The experience of all three was that there were occasions where support was not forthcoming, in spite of them requesting it. They described being *shouted* at, *pleading* and feeling *shaken* by these encounters. These times were experienced as *scary*, *tough, a struggle, time consuming, and stressful.*

'That was the first time I ran into issues in terms of contacting someone more senior as well on call... and that obviously gets very stressful. They're not answering their bleep and when they do call they're very confrontational, kind of, would shout at people over the phone, for genuine reasons' (Noel post interview)

You end up pleading like please; I'm the only person.. And I remember feeling, 'oh God'' (Claire post interview)

[Faye, on experiencing difficulty accessing support]*'I felt I had no choice but to ring my Consultant.. When I finally did get through to the *S.H.O. .. he didn't even try to understand my position. I had been in the job for 3 weeks, there was a sick patient and I found that really disappointing, and it really shook me in terms of this week now,..it's still playing in my head. I'm thinking 'what if it happens again?'(Faye audiodiary 1) *Senior House Officer*

Witness

Noel and Claire also described how negative workplace interactions, not directed at them specifically, were part of the workplace culture that they experienced. Noel described the tense atmosphere created where teams are afraid of their Consultant.

'Especially on ward rounds .. it's not quite hostile, but it's a fairly tense working environment where really everyone is trying to … tip toe around making sure that everything is exactly how the consultant wants it, at the risk of making them angry .. it is not just something that seems to be limited to just the team that I am on, several other teams that seem tense on ward rounds and notably they are all surgical teams, … being very careful just to avoid getting something wrong that might spark a reaction' (Noel audio diary 1)

Claire witnessed unprofessional interactions between other doctors.

'But I remember overhearing in xxxx, 'oh we're not taking their patient because they didn't take our one last time' or something like. And you're like that's stupid, and that's not why we're here either.' (Claire post interview)

'Sometimes they ridicule what your own team has put in place, a plan or something?' (Claire post interview)

Claire and Noel described how difficult workplace relationships between doctors may potentially compromise patient care and although they themselves were not direct targets, they were indirectly affected by these interactions.

*'I rang the med reg, and I must have gone and ran an *ABG when she came and she left again, and still hadn't left a load of instructions, so I rang her again and she was like, I'm not coming 'till your surgical reg comes, and I was like, oh this is totally peoples personal lives getting in the way, because apparently they didn't get on.' (Claire post interview)* ***arterial blood gas test***

'It seems to be like a power struggle going on where I can just remember one case where I was asked by the surgical registrar to get the medical registrar to review someone but then they weren't happy with the medical registrar's assessment of what was happening and I ended up having to kind of communicate between the two as a sort of a middle man and trying not to annoy either of them while still trying to make sure that somebody was looking out for the patient' (Noel post interview)

5.3.2 Disempowerment

This superordinate theme was comprised of subthemes of *tolerance* and *self-censorship.*

Tolerance

Prior to commencing work, Faye and Noel felt that perhaps the best way to deal with an unpleasant interaction was not to react or challenge it. Faye stated her position in the medical hierarchy as a reason for this and Noel feared that reacting might exacerbate the situation.

> *'I'd be worried about being a bit of a, not a push over, but a people pleaser and I suppose as the intern you are at the bottom, I think there's probably going to be a sense of, you know, I have to do it and I think you'd be very brave to be like I don't feel comfortable with doing that' (Faye pre interview)*
>
> *'I wouldn't want to be reacting too much in a way that you know just makes the matter worse' (Noel pre interview)*

On commencing work, this remained the case for all our participants, in that, at no stage during the year did they describe actively challenging disrespectful behaviour directed at them. Faye felt that to challenge certain individuals would not change the situation or that to challenge others may result in negative repercussions. She also cited her low position in the medical hierarchy as a reason to accept unprofessional behaviour.

> *'You feel that as an intern sure I have to suck it up and you know this is it.'*
> *(Faye post interview)*
>
> *'Honestly I wouldn't feel comfortable discussing it because I know the kind of personality type of this person and I know they would just genuinely come back and haunt you.' (Faye post interview)*

'You build a tough skin towards the end with these kinds of things' (Claire post interview)

The transient nature of intern jobs was described by Noel as a reason that may make tolerating a tense environment easier.

'[The team is] *very careful just to avoid getting something wrong that might spark a reaction, that seems fairly unstable in the long term for anyone working on the team, I know I am only there for a few months' (Noel audio diary 1)*

At an institutional level, Noel observed that although a particular Consultant was known to be difficult, his behaviour remained unchallenged within the organisation, leaving Noel feeling powerless.

[On experiencing verbal abuse from a senior doctor] '*Obviously, I mean I said it to the team, ... but, it's one of those things, he has a reputation, 'well that's just him, and there's not much we can do' type of, you know, ... it was one in particular, they have a reputation, and everybody knows it. Although, nothings done about it .... the fact that they do this sort of thing all the time, and get away with it, it's never really challenged properly.' (Noel post Interview)*

On the other hand, Noel also described an unhelpful Registrar where the issue was raised and resolved by the Intern supervisor.

*'Yeah it was raised with the *NCHD lead in the hospital, and then that was all dealt with. That was the one good thing I suppose they were very quick to deal with it.' (Noel post Interview) *Non Consultant Hospital Doctor*

In addition, Claire and Noel exhibited rationalisation of bad behaviour directed towards them, Noel did this pre-emptively prior to starting work and Claire echoed it when she experienced negative interactions as she requested consultations from other departments.

[On the *'troublesome'* nature of ordering investigations from radiology] *'But I suppose that is understandable that they are very busy so I imagine you have an understanding of that and be prepared before you go down and hope that they will be quite understanding' (Noel pre interview)*

[On experiencing difficulty requesting consultations*]'I find at times that it can be challenging as it is a very highly stressed environment' (Claire audio diary 2)*

'They're under, obviously they are under some pressure .. I don't know.' (Claire post interview)

Self-censorship

The interactions Claire, Faye and Noel had with senior doctors when they sought support were at times difficult and this influenced their future support seeking behaviour.

Prior to commencing work, Claire anticipated that, although positive relationships would make seeking support easier, she would always ask for help regardless of the nature of the interaction. However, as a consequence of negative experiences, Claire described how requests for support that were received badly, led to her regretting asking for help and that she began to tailor her requests, depending on the personality of the senior doctor, choosing not to call certain doctors unless urgently required.

'But I don't think I'd ever be afraid to call somebody even if I didn't get on with them. It would just be nicer if I got on with them' (Claire pre interview)

'When there's like say a certain med reg on, you could call them about anything, but when there is another one, you're like, I won't call them unless it's really needed, it's just hassle or its difficult to get them to come' (Claire post interview)

*'Like sometimes when you call the med reg they might be like oh I'm with this other patient, and would be just like, look I'll come over in a while, but .. you know [*it*] might just be their tone, or something. It probably didn't happen that much, but when it does happen you're kind of like maybe I shouldn't have asked' (Claire post interview)*

Noel also described not calling Registrars known to be unhelpful and feeling vulnerable and potentially responsible should an adverse incident occur.

'It gets to the point, when you know, you're not really calling because they are not going to help, which is bad then in terms of if something goes wrong and you have to defend yourself and you didn't call.' (Noel post interview)

Noel and Faye also described resorting to conferring with fellow interns on call when there was difficulty getting support from senior staff.

' the first time a lot of us experienced that sort of problem on call .. we talked to each other in that case, and tried.., between the 4 Interns that were on for that night we'd run things by each other if we were really stuck' (Noel post interview)

'What have I done? I have actually gone to fellow interns. I've texted doctors that I know wouldn't have been working at that moment in time in desperation…' (Faye post Interview)

5.4 Discussion

5.4.1 Principal findings

The most striking aspect of this study was the mistreatment experienced by participants at the hands of more senior doctors. Even prior to commencing practice Claire, Faye and Noel were aware of the potential for negative interactions with more senior doctors. They expressed apprehension and uncertainty regarding how asking for support would be received and did not anticipate actively challenging unprofessional behaviour directed towards them. On commencing work, they described distressing experiences, where they were mistreated by doctors from other

departments as they made requests on behalf of their teams. They also described experiences when support was not provided in spite of it being requested and how the associated unpleasant interactions negatively affected their subsequent support seeking behaviour. Unprofessional behaviour between other doctors was also witnessed. Their low position in the hierarchy contributed to a position of powerlessness in the face of such behaviour.

5.4.2 Resident Mistreatment

This study further reinforces the endemic nature of mistreatment in medicine indicating a systemic problem (44, 93, 99, 103, 269, 300, 310). Part of Claire, Faye and Noels' role involved carrying out their teams' instructions to book radiological investigations or obtain consultations from other specialties. They appeared resigned to an often-hostile reaction for simply carrying out their duties, and neither challenged or reported it. One must ask if it is appropriate that the most junior members of the clinical team are subject to interactions so imbalanced regarding status and hierarchy, with few resources to protect themselves from a hostile or dismissive response. The general reaction in this study to unprofessional behaviour was tolerance and to become less sensitive to it, with, fear of repercussions, their low position in the medical hierarchy, the transient nature of their attachments and the feeling that speaking up would not change anything, cited as reasons for this. Mistreatment often remains unreported by residents (96, 99, 267, 268, 278, 300, 311). As is evident in this study, status and hierarchy play a role, both in the behaviour and in its acceptance (272, 278), with those lowest in the hierarchy often the most vulnerable to mistreatment (276). Senior doctors from other departments were cited as perpetrators of mistreatment towards participants in this study, which has been reported previously (273, 312). Bearman et al demonstrated that while

residents were prepared to complain about workplace issues such as pay, roster or administrative issues, they displayed tolerance for behaviours such as verbal abuse from senior doctors (61). This reluctance to challenge seniors may indicate fear, or lack of power in the hierarchical culture, or residents socialisation into the culture of medicine as transmitted by the hidden curriculum, with the acceptance of unprofessional behaviour being one way of demonstrating their worthiness for the profession (220, 224, 278, 289, 302, 313, 314). It is noteworthy that medical students have been shown to be less likely to report bullying or harassment than nurses (314).

Noel observed organisational tolerance to the unprofessional behaviour of certain Consultants but did note that satisfactory measures were taken when an unsupportive junior doctor was reported, potentially implicating the perpetrator's high position in the hierarchy, as a contributory factor in the organisational failure to challenge a 'high value' individual (315). For some individuals, the ability to mistreat residents without organisational sanction may validate their status within the hierarchy (276). A perception of organisational tolerance can normalise this behaviour perpetuating further resident mistreatment (94, 276). Noel cited the brief nature of his attachment as a factor in his tolerance of a 'hostile' working environment. Rotating between jobs during the first year of practice may be described as challenging. However, the finite nature of individual jobs, in addition to residents' perceptions that abusive behaviours, and their low status, are temporary and self-limiting due to the natural hierarchical progression in medical education, may make these behaviours easier to tolerate (50, 61). This resonates with a study of medical residents' stressors during the first year of practice where difficulties encountered during the year are perceived as temporary, so they stay silent and 'dream of a less stressful future' (227). Other reasons for not reporting unprofessional behaviour include fear of stigma, retaliation,

damage to career prospects, negative evaluations, lack of knowledge of reporting procedures, confidentiality and the impression that reporting will not result in any change (15, 98, 103, 233, 275, 278, 283, 302, 316, 317).

In order to address these issues, an understanding of what is perceived as mistreatment is important. A wide range of terminology and definitions are used to describe disrespectful behaviour in the workplace, and medical students have related a variety of events, including more subtle incidents outside of those traditionally contained within organisational policies and therefore more difficult to report (267, 318). Residents can also have differing opinions about what qualifies as mistreatment, and perpetrators may not recognise bad behaviour in themselves (131, 275, 278, 289, 316, 319). Students and teachers may rationalise 'mistreatment' as potentially educational, or necessary for patient safety and therefore acceptable (131, 278, 279, 289, 320).

Research exploring interventions that address medical resident mistreatment is limited. In particular, there is a paucity of evidence on intervention effectiveness and on the use of theoretical frameworks to link the cause with the solution offered (321). Illing et al, using a realist synthesis approach, examined bullying and harassing behaviours in the NHS, and explored reported interventions to provide some insight into those that may be effective. They concluded that strong organisational commitment is most likely to support a positive workplace culture (283). Recommendations include a culture of awareness of negative behaviours, a zero tolerance approach within organisations, education regarding identifying and reporting problematic behaviour, strong supervisory and mentorship programs and creation of committees to confidentially and impartially deal with reported issues and appraisal, feedback and coaching of perpetrators to modify behaviour (275, 278,

283, 322). Fried et als' longitudinal study reports the disappointing persistence of mistreatment in their institution in spite of 13 years of organisational interventions, highlighting the hidden curriculum as potentially undermining their efforts (299)

5.4.3 Support Seeking

The perpetrators of mistreatment towards residents are often supervisors or senior staff (283). Effective clinical supervision is associated with improved patient care, and for the resident, enhances education, confidence, professional development and socialisation and contributes to them feeling valued and respected (323, 324). Poor supervision is associated with an adverse impact on patient care, and resident wellbeing (19, 61, 64, 323, 325).

In this study, prior to commencing practice, participants expressed apprehension about approaching senior doctors for support. The decision by the resident to request support is a complex one, and is not only based on the clinical need of the patient, but on a variety of additional factors (293, 326). It is recognised that residents consider the approachability and availability of their supervisors prior to asking for help. Considering their supervisors availability, (their workload and rota and not wanting to trouble them), and their approachability, knowing which doctors 'do not like to be bothered', not wishing to be judged to be imposing on them, reflects to some degree, the resident's desire for integration within the community of doctors, to be seen to be a 'team player' and a worthy colleague (293, 326).

However, when Claire, Faye, and Noel commenced work, a different perspective to the decision making process was seen. Rather than a reluctance to ask for help, all described occasions where senior support, in the form of clinical supervision, when requested, was not forthcoming. The negative, distressing responses from their

senior colleagues were seen to adversely affect participants' subsequent support seeking behaviour, from a reluctance to call, to not calling at all. This echoes other studies that suggest that seniors judged to be intolerant (less 'approachable') are less likely to be contacted for support (293, 327, 328). What is clear from this study is that the perception of lack of approachability of supervisors originated from actual experiences of mistreatment following requests for support.

Another component of the decision making process for residents that has been described, is a hierarchy of assistance. Residents refer initially to the literature, and go to immediate peer colleagues, prior to approaching progressively senior doctors for support (326). In this study however, the converse was seen to occur where both Noel and Faye both had to resort to conferring with fellow interns when senior help was not forthcoming in spite of it being sought. This has obvious patient safety implications.

Supervisors have been advised that the way they communicate their availability to be contacted on call, can negatively influence residents' decisions about whether to ask them for help (329). Residents are sensitive to subtle nuances and supervisors need to be explicit in their advice to residents to call them for support at any time. In this study, there is nothing subtle or nuanced in the negative reactions they are exposed to, and the potential adverse effects to patient safety that could ensue.

5.5 Conclusion

This study highlights the pervasive and hierarchical nature of medical resident mistreatment, with resident reluctance to challenge this behaviour and perceived institutional tolerance demonstrated. Participants' difficulties securing support and

the associated interactions with senior doctors were seen to negatively influence their support seeking behaviours, with patient care implications. These findings and their implications for practice will be discussed in more depth in chapter 7: Discussion.

Chapter Six

6. Interventions to Support Preparedness for Clinical Practice: A Scoping Review

6.1 Introduction

The stress of commencing the first year of clinical practice for newly graduated doctors is heightened by a perceived or actual lack of preparedness for certain areas of practice (4, 40, 85, 330). Graduates have reported feeling unprepared, and supervisors and program directors have also expressed concerns that residents are not adequately prepared to commence work (85, 331, 332). Some studies have found that preparedness varies according to medical school attended or within medical schools (6, 13, 89), resulting in graduates of varying states of preparedness commencing practice. Lack of preparedness when graduates start work can also have negative implications for patient safety (333, 334).

Residents, program directors and supervisors have pointed to deficiencies in undergraduate preparation, and have recommended more experience in the role of doctor for undergraduates, citing rotations such as subinternships, assistantships and shadowing (40, 85, 335-338). These rotations and other undergraduate and postgraduate interventions such as capstone courses, inductions and orientations have been implemented to support preparedness for practice (339-341). In the U.K., a rapid review of the literature (2009-2014) carried out by Monrouxe et al, concluded that ‘carefully designed and implemented transitional interventions, on the undergraduate and postgraduate sides, are an essential component to junior doctors'

well-being and patient safety' (342). Over half of American medical schools who participated in the Liaison Committee of Medical Education Annual Medical School Questionnaire (2014-2015) reported having a transition to residency course (343). Variously called capstone courses, internship preparation courses, transition courses or boot camps, they vary in setting, structure, duration and teaching modality (339).

Some reviews have been published regarding transitional interventions. These are mostly systematic literature reviews (344-346). Other reviews include a rapid review of the literature carried out by Monrouxe et al (342) and an examination of published literature and the websites of 136 medical schools by Elnicki et al (339). However, these reviews are limited, by geographical area, focusing for example on the UK (342), North America (344), and the USA (339, 346); they have an undergraduate (339, 346) or specialty specific (345, 346) focus; or they describe interventions for all role transitions during the residency years in addition to that from student to doctor (344).

These reviews describe a wide variety of transitional interventions. Monrouxe et al discussed assistantships, shadowing and inductions using the definitions of the General Medical Council (342, 347). An assistantship was defined as 'a period of hands-on learning, enabling medical students to become fully integrated in a clinical team to practise their clinical skills and to take on some responsibilities under supervision' (347). They reported some indication that assistantships may reduce anxiety and enhance team integration (342). They provided the 'post-2012' description of shadowing, as an obligatory 4-day paid period immediately before commencing work, to enable graduates to gain familiarity with their future role, working environment and work colleagues (347). There was evidence that shadowing improves preparedness, particularly if it is in the graduate's future post,

and combined with related teaching (342). Inductions, according to Monrouxe, should entail an introduction to the work environment and employment policies by the Department of Human Resources. Content and implementation of inductions however were reported as inconsistent and lack of preparedness was associated with poor inductions (342).

Boot camps have been described as synonymous with crash courses, transition courses, rookie camps (344), surgical skills courses (345), preparedness courses, and capstone courses (339, 344, 346). Although definitions of these interventions vary, Blackmore et al, in their meta-analysis of post graduate boot camps, noted commonalities between them, resulting in their description of boot camps as 'courses/sessions aimed to prepare or orient learners undergoing clinical transitions'. They noted that 'boot camps were structured as short and focused courses, and a wide variety of educational methods were applied in each camp with a particular focus on the use of simulation' (344). Boot camps vary in their design and development (344), teaching modalities used (339, 344) and duration (339, 345). The main outcome reported in the literature was an increase in confidence (339, 344-346) with improvements in clinical skills and knowledge also described (339, 344, 345) in the short term. Longer-term follow up of these interventions was described as lacking (339, 344, 346).

I conducted a preliminary search for scoping and systematic reviews in JBI (Johanna Briggs Institute) Database of Systematic and Implementation Reports, the Cochrane Database of Systematic Reviews, CINAHL (the Cumulative Index to Nursing and Allied Health Literature) and Medline Ovid to identify if a review had already been carried out. I concluded that a broad overview of the current extent of research activity on interventions that have been implemented to support preparedness for

clinical practice is lacking, and would enhance our knowledge and guide further research, practice and policy in this area (201). I carried out this scoping review to explore the breadth of research available on interventions that have been implemented because of an identified gap in preparedness for practice by the undergraduate curriculum, or that are clearly linked to easing the transition to becoming a practitioner.

6.2 Methods

6.2.1 Scoping Review

The first methodological framework for carrying out a scoping review was published in 2005 by Arksey and O'Malley (202). They described a six-stage process as follows:

1. Identifying the research question
2. Identifying relevant studies
3. Study selection
4. Charting the data
5. Collating, summarising and reporting the results
6. Consultation (optional)

Each stage in this framework was clarified and extended by Levac et al (201) followed by the publication of formal guidance for the conduct of systematic scoping reviews in 2015 by a working group of the Johanna Briggs Institute (348). These frameworks informed this review.

6.2.2 A priori-protocol

I first enlisted a research team of experts to participate in this review, consisting of DB, AW (Anel Wiese), HH (Helen Hynes), and AJ (Aislinn Joy) and I. We developed an a-priori protocol for the scoping review by predefining the research question, data sources, search strategy, selection and data extraction process and the presentation of the extracted data (203). A more detailed description of each stage follows.

6.2.3 Identifying the research question

We held a research team meeting to discuss the focus of the review, including the population, the interventions and the outcomes of interest. These initial discussions would also inform further discussions regarding our search strategy and study selection. In keeping with the concept of a scoping review to map the extent of research activity in a given area, we wished to take a broad approach; therefore, we framed our research question as follows:

What interventions have been implemented for final year medical students or first year postgraduate doctors to support preparedness for commencing clinical practice, in response to a perceived or documented gap in the undergraduate curriculum or with the intention of easing the transition to clinical practice?

6.2.4 Identifying the relevant studies; data sources and search strategy

The first stage in the identification of relevant studies involved brainstorming of key terms by the research team and a limited search of the Medline Ovid database to identify appropriate text words in the titles, abstracts and index terms of relevant articles. This guided the development of our initial search strategy. This search strategy was piloted in Medline Ovid resulting in a refinement and team consensus

of the chosen search strategy. The final search strategy used for Medline Ovid is illustrated in table 6.1, and was adapted for the other databases searched. We searched the following six electronic databases: Medline Ovid, Embase, CINAHL (Cumulative Index to Nursing and Allied Health Literature), PsychInfo, ERIC (Education Resources Information Centre) and SocIndex from inception to 11th – 13th September 2018. The following key journals were hand-searched: Medical Education, Academic Medicine and Medical Teacher from Jan 2000 to Sept 2018. In addition, references and citations of included articles were searched to identify additional relevant papers. All citations were imported into the endnote reference manager and duplicates removed.

Table 6.1: Search strategy used for Medline Ovid

Search terms used for Medline Ovid	
• ‘Internship and Residency’/ • Students, Medical/ • medical student*.tw • final year student*.tw • intern.tw • interns*.tw • pre-intern*.tw • newly qualified doctor*.tw • residen*.tw • pre-residen*.tw • junior doctor*.tw • house officer*.tw	• pre-registration house officer*.tw • PRHO.tw • foundation year one.tw • foundation year 1.tw • fy1.tw • f1 doctor*.tw • post graduate year one.tw • postgraduate year one.tw • post graduate year 1.tw • postgraduate year 1.tw • PGY-1.tw
AND (Boolean)	
• transition.tw • prepare*.tw	
AND (Boolean)	
• assistantship*.tw • course*.tw • boot camp*.tw • bootcamp*.tw • subinternship*.tw	• bridging program*.tw • workshop*.tw • rookie camp*.tw • capstone*.tw

Tw in Medline Ovid includes Title (TI) and Abstract (AB).

6.2.5 Study selection

A team approach was used to define the inclusion criteria with discussion and consensus. Relevant empirical papers in the English language, using any study design were included. Undergraduate or postgraduate interventions were included if they were implemented in the final year of medical school or in the first postgraduate year of practice. If interventions also included other participants, for example participants from other undergraduate or postgraduate years, these papers were included if the interventions were clearly linked to supporting the transition from medical student to doctor. Papers were selected if they described interventions that were implemented and introduced in the context of a shortcoming or gap, identified or perceived, in preparedness for practice, with the purpose of better preparedness for transition, or of supporting the transition. Our focus was on discrete interventions rather than more general curricular content.

Initial screening consisted of title screening to remove papers clearly unrelated to the topic. Following this, screening of titles and abstracts, was carried out by DB and I, to identify papers for full text review. Full text screening was then carried out with each paper reviewed independently by 2 reviewers based on the inclusion/exclusion criteria. Regular meetings of the research team were held to discuss the review process with any discrepancies were arbitrated by one reviewer- DB.

6.2.6 Charting the data

We developed an initial data extraction form by discussion and consensus. A pilot data extraction of 10 articles, was carried out independently by each member of the team, followed by a meeting to discuss, clarify any issues and refine the data extraction form (table 6.2).

Table 6.2: Data extracted.

• Author/Year	• Intervention-Implementation
• Title	• Intervention-Evaluation
• Journal	• Kirkpatrick's Level
• Type of article	• Justify Kirkpatrick's level
• Country	• Type of Participant
• Aims	• Number of participants
• Methodology	• Type of Comparator
• Study Design	• Number of Comparators
• Specialty	• Timing of Intervention
• Intervention-Type	• Duration of Intervention
• Intervention-Rationale	• Findings/Results
• Intervention-Curricular Design	• Conclusions
• Intervention-Focus	

6.2.7 Kirkpatrick's levels

Regarding the evaluation of the interventions, it is useful to classify evaluation according to different outcomes. Kirkpatrick's hierarchy of levels, originally developed by Donald Kirkpatrick in 1967 is widely used and 'is a core BEME (Best Evidence in Medical Education) methodology' (349, 350).

A modified version of the Kirkpatrick's hierarchy as per BEME (350-352) is as follows:

- Level 1- Participation.
- Level 2a- Modification of attitudes or perceptions.
- Level 2b- Modifications of knowledge or skills.
- Level 3- Behaviour change.
- Level 4a- Change in organisational practice.
- Level 4b- Benefit to patients.

As many interventions may be evaluated at a number of levels, the highest level of evaluation was recorded during data extraction for classification purposes.

6.3 Results

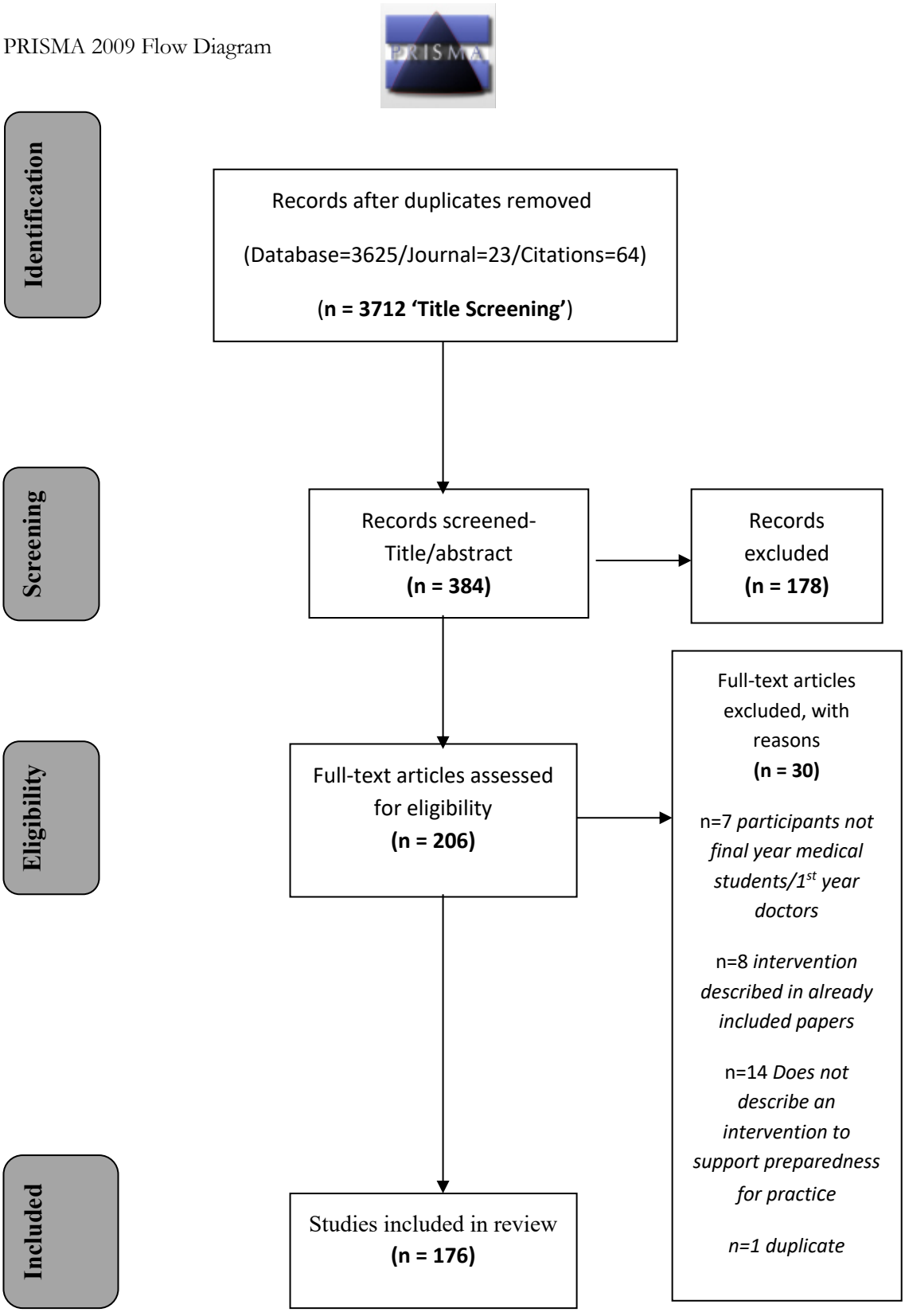


Figure 6.1: PRISMA Flow Diagram

6.3.1 General characteristics of included studies

The search outlined in the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) flow diagram yielded a total of 176 papers that were identified for inclusion in this scoping review. Details of identified papers with separate bibliography can be found in Appendix G-Scoping review papers and bibliography.

There were 113 full papers, 47 conference abstracts, 14 short papers, and 2 letters. This research emanated from a total of 17 countries. Most studies were conducted in North America (*60%)* and Europe (*30%)* followed by Asia (*5%)* and Australia (*4%)* with 2 papers published from Africa (*1%)* (Appendix: H table (i)). Most research activity has occurred in recent years with the majority of papers published from 2010 onwards (*86%)* (Figure 6.2).

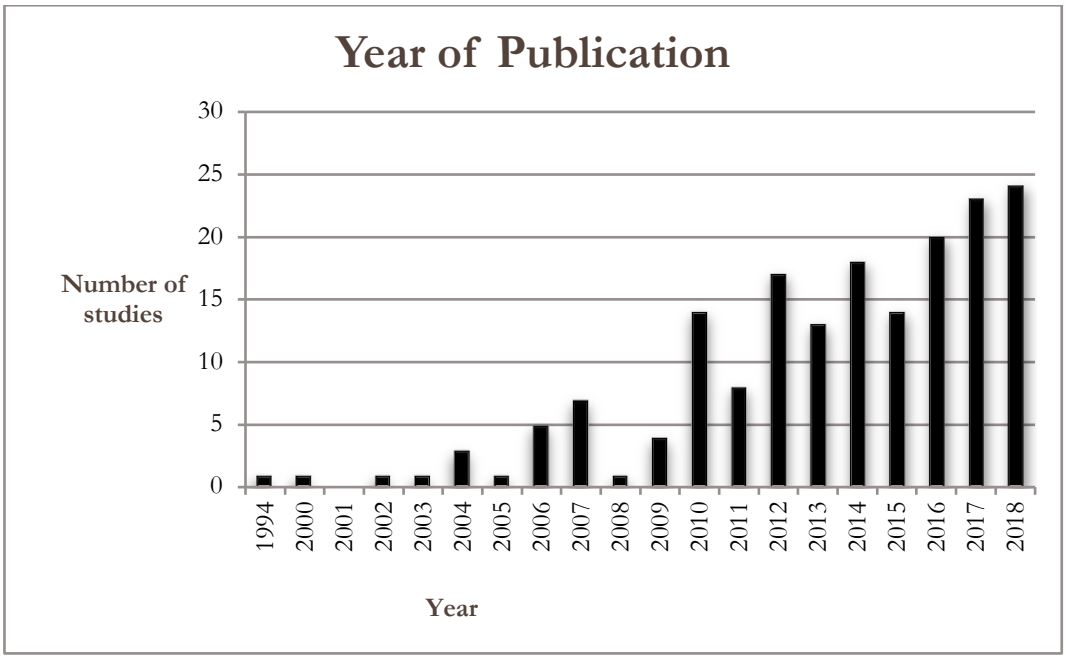


Figure 6.2: Year of publication of included articles

6.3.2 Categorisation of Interventions

A broad range of terms was used to label interventions, including *boot camp*, *preparation course, internship course, readiness for residency course, intern preparation camp, specialty specific elective, surgical pre-graduation preparation course, intensive surgical skills curriculum,* and *immersive simulation course.* More than one label was ascribed to interventions in many papers leading to considerable conceptual overlap. For clarity and standardisation, we defined *courses*, *boot camps*, *workshops*, *orientations and inductions* and *subinternships, assistantships and shadowing* and categorised the interventions identified in this review accordingly (figure 6.3).

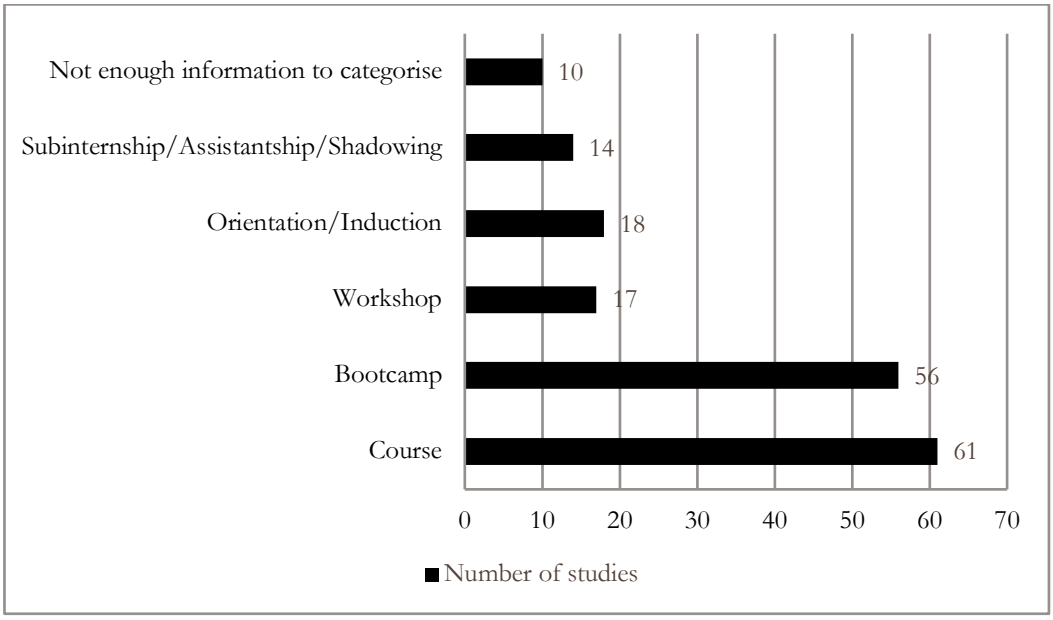


Figure 6.3: Categorisation of interventions

Courses:

We defined a course as a discrete program of learning activities with specific learning objectives. We excluded our other categories of intervention from this group. Courses comprised 35% of the interventions identified in this review. Most of

these were implemented during the undergraduate phase (72%). Durations varied. Almost 46% were run on consecutive days, the majority of these were less than 4 weeks in duration. A number of courses (41%) were discontinuous with discrete sessions scheduled over differing periods of time, between 3 weeks and 1 year. The majority of courses were surgical or specialty neutral in orientation (80%). Content of courses was generally multifaceted focusing on patient care and management, clinical and technical skills and used a variety of different teaching modalities.

Boot camps

We defined boot camps as immersive, practical, intensive courses delivered over consecutive days, with clearly defined objectives, commonly using simulation. Boot camps formed 32% of interventions in this review. More detailed information regarding the specialty, setting, focus, teaching modality and duration of the boot camps described is provided in table 6.3.

Table 6.3: Boot camps

BOOT CAMPS	**Number of studies (Total number =56)**
Setting	Undergraduate- 34 Postgraduate- 22
Country	USA- 35 Canada- 4 UK- 6 Australia- 2 Turkey- 2 Africa/India/Israel/Spain/Ireland/Sri Lanka/Germany- 1 each
Specialty	Surgery/Anaesthetics- 16 Medicine related- 15 Obstetrics and Gynaecology- 4 General- 18 Paediatrics- 3
Focus	Knowledge Procedural skills Communication Patient care skills Competency assessments
Teaching Modality	Some form of Simulation - 53 Real patient contact - 2 Unspecified- 1
Duration	1day or less- 11 1 week or less- 23 >1wk-4weeks-17 >4-8weeks- 1 >8-12weeks- 1 Unspecified -3

Subinternships/assistantships/shadowing

We defined subinternships, assistantships and shadowing as attachments involving the supervised assumption of responsibility for real patients in the clinical setting. In this review, subinternships, assistantships, and shadowing all occurred in the undergraduate setting. Subinternships and assistantships refer to interventions based in the USA and UK respectively. The focus of interventions during the subinternship

included general knowledge, skills and attitudes (218), acute care, transitions of care and cross coverage (353-355). Papers in this review explored assistantships with respect to general experience, structure, duration, and alignment with future post (213, 219, 356-361). Work shadowing was described as a placement where final year students spend time with the first year doctors they are due to take over from, to learn how to perform and understand the duties of being a doctor, including routine ward work, acute patient care, and becoming familiar with their future work colleagues in the clinical environment (122, 362, 363).

Orientations/inductions

We defined an orientation or an induction as an organised program occurring on commencement of work as a first year doctor, likely to involve a mix of activities, either focused entirely on transmitting information about the new role and the work environment or also including some skills training. There was no significant discernible difference between orientations and inductions in this review. Fourteen studies described different structures and delivery of intern orientation. Orientations were described as a means to increase confidence, ease the transition and prepare graduates to work in the clinical environment (364-369), to provide key medical knowledge, technical and administrative skills, or as a means to assess and document competency, facilitating decisions regarding supervision (370-375). They encompassed different specialties, and durations varied, between 1 day and 4 weeks. Four studies described the intern induction to better prepare graduates for practice. They were of differing durations, between 5 days and 18 days, 3 were specialty neutral (212, 376, 377) and one described an induction to anaesthetics (378). Content included shadowing the outgoing resident, skills testing and remediation, life

support, emergency and clinical skills training, new employee administration, and mandatory training (212, 376-378).

Workshops

We defined workshops as brief, interactive, learning activities, one day or shorter in duration, and practically focused, on skills or other areas. The main difference between boot camps and workshops is the immersive nature of boot camps. We categorised seventeen of the interventions as workshops. They were implemented in both the undergraduate and postgraduate setting. Content of workshops was generally focused on specific areas such as transitions of care (379), the electronic health record (380), inter-professional learning (381), clinical referrals (382), history taking and presentation (383), communication (384) prescribing (385), wellness (386), and nutrition (387). Teaching modalities employed included didactics, case based scenarios, practical sessions and simulation.

6.3.3 Characteristics of Interventions

More interventions occurred during the undergraduate phase (62%) than postgraduate (38%). 42% of all interventions described were specialty neutral, followed by surgery at 28% and medicine at 18% and obstetrics and gynaecology, paediatrics, general practice and pathology at 12% (see Appendix H: table (ii) specialty)

6.3.4 Methodology

Quantitative methodology was employed by 55% of the studies, 33% used mixed methods and 6% of studies used a qualitative methodology which consisted of interviews, focus groups, or surveys eliciting comments or reflections. The most common study design was that of a one group prepost test (50%) followed by a one-

group posttest (22%). A comparison group was used in 19% of studies with 3% randomising (Appendix H: table (iii) study design).

6.3.5 Curricular Design

A minority of papers reported on the development of the intervention. When they did, often, more than one of the methods described in table 6.4 was employed. Theoretical frameworks cited included Kerns approach to curricular development (374), Erikson's model of deliberate practice, the cognitive apprenticeship model (388), Kolb's experiential learning model, Blooms revised taxonomy of learning objectives and Rudolph's model for a safe learning context (389).

Table 6.4: Development of Intervention

Development of Intervention	**Number of papers (%)**
Needs analysis	30 (17%)
Competency Based Framework	24 (14%)
National/Specialty Guidelines, frameworks, recommendations	10 (6%)
Literature review	8 (4%)
Common scenarios/errors	6 (3%)
Theoretical frameworks	4 (2%)
Curricular Gaps	1 (1%)
Result of previous pilot course	1 (1%)

6.3.6 Sample Size

The majority of interventions were carried out at a single site (89%) with 14 papers citing interventions carried out at more than one site (8%). Of articles that specified sample size, 72% recorded numbers of less than 50 participants. (Appendix H figure (i) sample size)

6.3.7 Duration

149 papers defined the duration of their interventions (83%). The vast majority lasted 4 weeks or less (86%).

Table 6.5: Duration of interventions

Duration of Intervention	**Number of studies**
0- 1 day	30
>1 day-1 week	41
>1 week-4 weeks	57
>4 weeks-8 weeks	10
>8 weeks-12 weeks	6
>12-16 weeks	2
30 weeks	1
Over course of year	2
Unspecified	27

6.3.8 Intervention: Delivery

Faculty and other doctors mainly carried out delivery of interventions (Appendix G table (v)). 7 papers explicitly discussed the incorporation of peer-led or near-peer teaching as part of their interventions (390-396), this received positive feedback from learners, finding the peers/near peers approachable, and their perspective tailored to their educational needs. Nurses were involved in 21 (62, 377, 397-414) and pharmacists in 8 interventions (377, 398, 400, 401, 406, 414-416) (Appendix H table (iv) delivery of interventions).

6.3.9 Intervention: Teaching Modalities

Most papers used a combination of different teaching modalities. Simulation as a teaching technique was utilised in 70% of interventions (123/176 papers) and involved role-play, mock pages, standardised patients, manikins and high fidelity simulators. These were generally well-received interventions resulting in increased confidence and competence. Some studies reported participant appreciation of the realistic nature of the simulated intervention (407, 417-419) and of the 'safe' nature of the learning experience (417, 420).

Real-patient hands-on experience was involved in 16% of interventions (29/176), most commonly with clinical shifts or attachments in various specialties, shadowing and subinternships/assistantships. Valued aspects of real patient contact included; experiencing responsibility under supervision (213, 360, 361, 421), with supervision described as providing a 'safe' context in which to learn (363) and the opportunity to become familiar with future clinical workplace, role and colleagues (213, 360, 363, 377, 422, 423). In one study with a mix of simulation and real patient content, participants favoured shadowing over simulation (212). Some deficiencies in experiential real patient learning were described in individual studies, including, less exposure to complex clinical communications (218), fewer 'acute care' experiences (360, 362) and participant feedback in one study described too many students on placements (402). Other teaching modalities used included didactics, interactive lectures, case based discussions, group coaching, online learning, and videos. 'Hands on' practical experience was explicitly favoured over didactics in some studies (122, 213, 360, 373, 402, 411, 424-428).

6.3.10 Content of Interventions

For the majority of the studies identified (143/176), the focus of the interventions was multifaceted: patient care and management, and clinical and technical skills. The remainder of the studies described interventions directed at specific aspects of the role of a first year doctor, examples include; 6 interventions focusing on prescribing (385, 392, 394, 400, 406, 414), 2 had physician wellbeing as their main focus (386, 429), while 2 other interventions also mentioned stress management, coping with mistakes and personal health advice (122, 430) and 1 paper focused on teamwork (431) (Appendix H table (vi) focus of interventions)

6.3.11 Evaluation and Outcomes

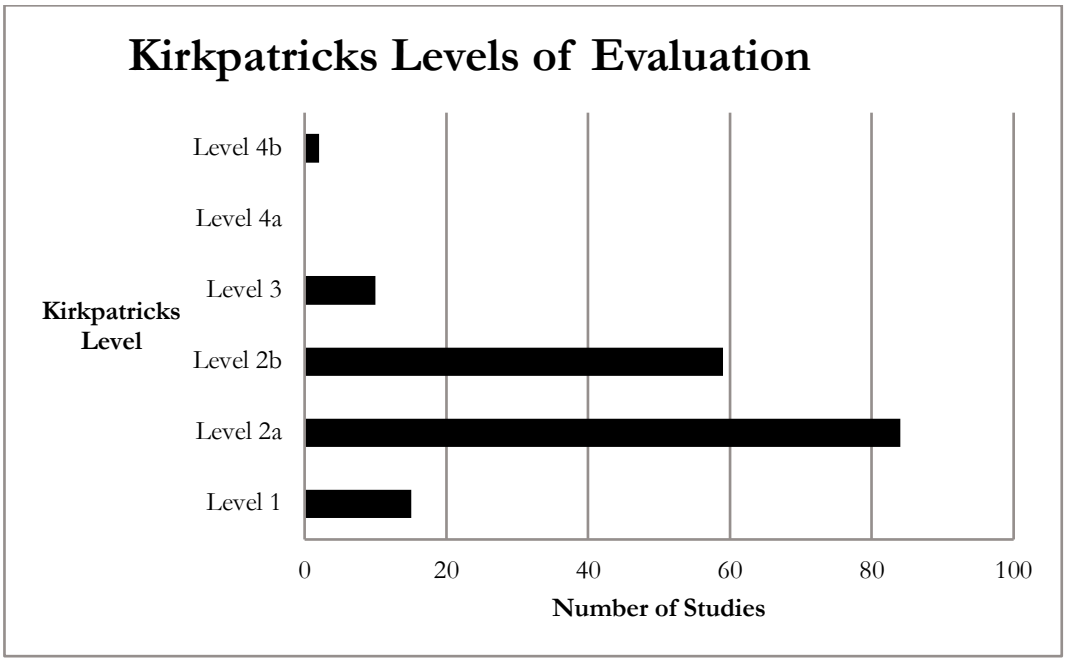


Figure 6.4: Kirkpatrick's Levels

Most studies included an evaluation of the intervention. The majority of these interventions were evaluated at level 2 (84%) followed by level 1 (9%) with 12 studies reporting level 3 or 4 evaluation (7%). Evaluation was unspecified in 6 papers.

Level 1 evaluation consisted of feedback collected from participants regarding their general learning experience, for example, their satisfaction with the content, organisation, and delivery of the intervention. All interventions evaluated at level 1 indicated satisfaction with the learning experience. Feedback regarding aspects of the intervention can assist future curricular development, for example, timing and duration of the intervention (219, 424, 432, 433), and the favouring of interventions that included active participation (213, 393, 402, 411).

Level 2a evaluation assessed changes in perceptions of confidence, competency, knowledge, and preparedness or readiness for practice as a result of the intervention. Most level 2a evaluations reported an increase in one or more of these variables immediately post the intervention. Durability of perceptions was infrequently studied, and produced varied results (212, 219, 366, 413, 421, 426, 434-436). Regarding durability, some studies reported an increase in perceived self-efficacy (426), self-perceived knowledge, competence and preparedness (434) and an increase in confidence (435) immediately post intervention. However, at 2 months, while the perception of procedural competence was maintained, the increase in confidence was not sustained (434), nor were initial increases in self-efficacy and confidence sustained at 6 months (426, 435) (apart from high-risk rarely performed tasks (435)). Other studies documented an increase in perceptions of confidence and preparedness that persisted at 1 month (212, 366).

Level 2b evaluation objectively assessed knowledge gained by the intervention or improvement in performance, by pre and post knowledge or performance assessments or using a comparison or control group with or without a pre-test. All studies reported an increase in knowledge immediately post intervention. Knowledge retention over time was explored by only 4 papers who reported a retention of knowledge at 2 months (425, 437), 3 months (438) and at 8 months (439) post intervention. Performance based assessments reported an overall improvement in performance post intervention compared with pre-assessment or with a control group, however again, few evaluations assessed durability of increased performance over time. A sustained increase in competency for procedural skills post intervention was described in 3 papers at 8 weeks, 6 months and 7 months respectively (440-442), while other studies reported that improved performance was not sustained at 2 months or 6 months, (443, 444).

Level 3 evaluation was carried out in 10 studies, 6 involving participants' own perceptions and 4 involving more objective assessments. Five studies reported that a majority of participants felt that they had applied what they learnt, with a positive impact on their first year of work, when surveyed at three months post intervention (379, 398), and at the end of the first year of practice (377, 404, 445). In addition, Wunder et al explored participants self-reported 'time to unsupervised patient management and procedure performance' compared with first year residents who had not completed the course, and found that on average, the intervention group achieved independence earlier (446). More objective level 3 evaluation was also reported where the 'trained' group demonstrated; less duty hour violations (444), were judged to be more respectful, ethical, and compassionate, with better assessment and communication skills (408), and displayed improved clinical

assessment and appropriate recruitment of senior help (447) compared with 'non trained' peers. In addition Rabago et al assessed the extent to which training outcomes were translated into clinical practice by tutor-assessment of bag mask ventilation and endotracheal intubation during normal clinical practice, and showed satisfactory transfer of skills to real patients (389).

Finally, this review identified two papers that assessed outcomes at level 4. Joyce et al reported less errors in ordering blood products in their 'trained' group (448) and Karpa et al described identification and (supervised) correction of real patients' medication errors and improvement in real patients' knowledge of their medications when assessed 3-6 months after a medication safety intervention (406).

6.4 Discussion

6.4.1 Principal findings

This scoping review provides an overview of the extent, range and nature of research into interventions to support preparedness for the first year of work as a doctor. Much research is being carried out in this area, particularly in recent years, however there is considerable scope for further research, for example, with respect to study design, implementation, development and evaluation. Greater clarity regarding terminology and categorisation of transitional interventions would improve standardisation. Other noteworthy findings include the lack of emphasis on real patient experience, the health and wellbeing of new graduates or on inter-professional participation in delivery of teaching.

6.4.2 Real patient experience

In general, in this review, interventions involving 'hands on' practical experience were favoured. Simulation was the most common teaching modality, with significantly less real-patient contact. It has been suggested that transitional interventions should ideally involve real-patient experience rather than learning in a simulated setting (91). Simulation enables patient care scenarios to be reproduced in a safe environment using mannequins, part-task trainers, simulated patients, computer generated simulations or hybrids of these (449, 450). It can provide scheduled, standardised learning opportunities, in a controlled environment, with opportunities for repetitive practice to consolidate learning. Simulation can mitigate patient safety and related ethical considerations, and can increase the medical knowledge, confidence and procedural skills of learners (449-453). It may also enhance teamwork, communication, adherence to protocols and clinical reasoning skills (449, 450).

However, there are many calls for transitional interventions to be situated in 'real life' (6, 91). Illing et al highlighted the importance of 'exposure to real practice, in the real context with all the complexity and crowdedness of the clinical environment' as an undergraduate and the difficulty of reproducing the complex context of clinical practice in a simulated setting (74). Echoing Illing, residents in a study carried out by Monrouxe et al reported that many aspects of their role are best 'learnt on the job', including acute patient care, prescribing, complex communication and procedural competency, and also emphasised the importance of meaningful participation in workplace activities as undergraduates (76). In addition, while simulation was regarded by some as beneficial in preparing for diagnosing and managing patients, others felt that simulation did not authentically replicate the complex and

unpredictable nature of the real-life patient care situations that residents manage (76).

Although simulation based learning may improve competence, real-patient experiential learning enhances learner capability by facilitating supported contribution to patient care within the complexity and unpredictability of the clinical context (454). It builds affective capability by allowing the learner to feel like a doctor, and to experience and reflect on values and emotions that result from participating in practice (454). Simulation therefore should be employed to complement real patient contact rather than replace it, as appears to be the case in this review, to prepare learners for commencing clinical practice (80, 452, 455).

6.4.3 Health and wellbeing

In this review, there was minimal focus on the health and wellbeing of the graduates. This resonates with Monrouxe et al who have suggested that research into new graduates preparedness for practice prioritises the short term requirement for baseline competency in skills and knowledge, with less emphasis on preparedness for the psychological and emotional aspects of a career in medicine (76). Stress management is a recognised area of poor preparedness for new graduates (91) and the transition to clinical practice is known to have an adverse impact on their health and wellbeing (6, 36, 38). The lack of emphasis on physician wellness in this review suggests a degree of apathy towards the subject.

While it is important to acknowledge that the burden of ensuring wellness should not lie solely with the new graduate, there are unavoidable stressors inherent in the occupation of physician, and the implementation of strategies to support students and residents to develop resilience in dealing with these stressors, is necessary and

appropriate (456). Resilience has been defined as ‘the mechanisms by which an individual might be equipped to engage with stressors with minimum negative impact, whilst experiencing personal growth and leading to the development of new coping mechanisms’ (457). However, the promotion of resilience in medical residents should not translate into the expectation that they should accept stressors that are avoidable such as difficult working conditions (458) or that physician wellness is the sole responsibility of the individual rather than a joint endeavour focusing on individual and organisational factors (459, 460). Therefore an approach that promotes individual, organisational, and cultural commitment to resident wellness is required (461, 462).

6.4.4 Inter-professional learning

Teamwork skills were the main focus of only one study and most interventions were faculty or doctor delivered with less explicit input from nursing or other multidisciplinary team members. Working and communicating within multi-professional teams are areas where new graduates can lack preparedness (76, 342). In spite of the importance of the multidisciplinary team for safe effective delivery of patient care, the nature of the role of the resident can inhibit inter-professional communication and collaboration (251). Furthermore, nurses provide support and supervision to residents when they first commence work, and are a key factor in the orientation of new doctors to the clinical environment, a role that is not generally acknowledged formally in medical education curricula (66, 246, 247). A number of educational, psychological and organisational strategies have been proposed to facilitate better teamwork in healthcare (463, 464) however teamwork interventions and acknowledgement of the important role of nurses are minimally evident in this review.

6.4.5 Implementation and evaluation

Categorisation of interventions was challenging due to the broad range and lack of clear consensus regarding terminology used. Few studies discussed how intervention design was informed. The specification of a defined framework (465, 466) for interventions to support preparedness for practice in combination with the other strategies described in the review, would enhance ease of implementation of reported interventions, mitigate variability among graduates entering residency and make the transition a more manageable step in the medical education continuum (335, 465, 467). In addition, there were no implementation studies reported in this review. Implementation studies are necessary to facilitate the transfer of intervention research into practice (468). Implementation research is concerned not just with the generation of knowledge but with the intended users of the reported research, with the application and use of the knowledge produced (469).

The majority of studies used quantitative methodology, a one-group pre-post design, small sample sizes, in a single site, with much scope for future research using more rigorous study designs (344, 470). Evaluation was predominantly focused on changes in attitudes, perceptions, knowledge or performance as a result of the intervention with less focus on retention over time. Finally, consistent with other studies on medical education interventions, few evaluations were carried out to assess the impact of the intervention in the workplace or its effect on patient outcome (344). Therefore, the results of this review indicate that further research and clarity in the areas of categorisation, development, and implementation of intervention in addition to higher-level study design and evaluation is necessary in this area.

6.5 Conclusion

This scoping review has provided an overview of research activity into interventions implemented to improve work readiness and ease the transition to clinical practice. My findings and their implications for practice will be explored in more depth in Chapter 7: Discussion.

Chapter Seven:

7. Discussion

7.1 Introduction

The focus of my thesis is on the transition from medical student to doctor. This transition was of interest to me, as, in spite of it being the subject of much research in medical education literature internationally, it remained problematic. The enduring nature of the difficulties encountered during this time, across countries and specialties, point to issues common to the residency experience. Although research to date, in the form of attitudinal information at population level, common qualitative themes and theoretical frameworks, affords us some insight into this formative period in the career of a doctor, a contemporaneous exploration of the lived experience of the transition from student to doctor, focusing on the psychological and emotional dimensions, from the perspective of the individual, is lacking in the literature. In addition, poor preparedness for some aspects of clinical practice has been implicated in contributing to the challenging nature of the transition. An overview of the current extent of research activity into interventions that have been implemented to support preparedness for practice is also lacking.

The aim of my thesis is to address these gaps in the understanding of the transition to clinical practice. This will provide new insights into the transition, inform undergraduate and postgraduate curricula, and inform interventions that could be implemented to mitigate the difficulties encountered.

7.2 Summary of Thesis

In chapter one, I introduced the focus of my thesis, the transition from medical student to doctor. I discussed the challenges faced by new graduates and the detrimental effect that the first year of practice can have on the health and wellbeing of the individual. Issues regarding preparedness for practice contribute to the difficulties encountered by residents. I argued that an in-depth exploration of the lived experience of transition from the perspective of the individual was lacking in the literature, as was an overview of the breadth of research in the literature into interventions to support preparedness for practice. I composed my research questions to address these gaps as follows:

1. What is the lived experience of the transition to clinical practice, from prior to commencing work through the first year of being a doctor?

   Sub-questions comprised the following;

   2 What is the lived experience of the recent medical graduate anticipating commencing clinical practice?
   3 What is the lived experience of transition to clinical practice from the perspective of the doctor at the end of the first year of practice?
   4 What is the lived experience of intra-professional mistreatment in the workplace from prior to commencing practice through the first year of being a doctor?

2. What interventions have been implemented for final year medical students or first year postgraduate doctors to ease the transition to clinical practice?

In chapter 2, I discussed my choice of the contemporary phenomenological approach of interpretative phenomenological analysis, underpinned by my

interpretivist/constructivist philosophical worldview, to address my research questions. I detailed the methods I employed to conduct this research, including; recruitment strategy, sample size, and data collection methods, and I discussed ethical issues, reflexivity and quality considerations. Finally, I outlined the scoping review methodology, which informed the review of the literature that I carried out, looking at interventions implemented to support the transition from student to doctor.

Chapter 3, 'Waiting in the wings; lived experience on the threshold of clinical practice', addressed my first research sub-question. I carried out semi-structured interviews with 14 purposively recruited recent medical graduates, regarding their experience of anticipation of commencing practice. I demonstrated that they were bracing themselves for a trial by ordeal. The hidden curriculum shaped their understanding of what was expected of them as new doctors, and inspired dysfunctional strategies to meet expectations. In Chapter 4, I detailed my second IPA study, 'Endured and Prevailed; lived experience of the transition from student to doctor through the first year of clinical practice'. Twelve participants from my first study consented to a second semi-structured interview as they neared the end of their first year of practice, with respect to their experience of transition through the first year of being a doctor. Analysis revealed overlapping temporal stages in the experience of transition, characterised by an initial emotional response with the adoption of functional and dysfunctional coping behaviours, followed by a gradual increase in confidence, challenges with workload, lack of support and difficult workplace interactions and a final stage of rationalisation of the challenges encountered during the year. Chapter 5, 'Discord and Disempowerment; a longitudinal study of the experience of intra-professional mistreatment during the

transition to clinical practice' is an in-depth exploration of the experience of intra-professional mistreatment with respect to three participants from my earlier studies during their transition to clinical practice. This study highlighted experiences of victimisation, disrespect and issues securing support from more senior doctors, which caused distress and inspired some maladaptive behaviours. Chapter 6 'Interventions to support preparedness for clinical practice: A scoping review' describes a scoping review of the literature of interventions implemented to support the transition from student to doctor. This review reflected increasing interest in this area in recent years, mostly using low level study designs and evaluations, and lack of standardisation regarding terminology and categorisation of interventions. Few studies described direct patient care experience, involvement of allied healthcare professionals or focused on the personal health and wellbeing of the individual doctors.

In this chapter, I draw together the findings outlined in the previous chapters, discuss my final conclusions regarding the identified themes, and connections between studies and discuss implications for medical education and practice arising from my findings. I indicate how my research has added to the existing knowledge regarding the transition to clinical practice, and acknowledge the strengths and limitations of my work.

7.3 Principal Findings

The abrupt nature of the initial transition period was anxiety provoking for participants, both in the experience of anticipation and with the reality of practice. Beyond this initial stage, challenges related to cultural, relational and contextual matters predominated.

7.3.1 Early transition period

I have described the overlapping temporal stages of the transition experience for medical graduates as they commence clinical practice, an aspect of the transition that has not been explored previously in medical education literature (ref Chapter 4). These overlapping stages resonate with the concept of the transition to clinical practice as a rite of passage (239), and with the stages of transition described in newly graduated nurses (111, 241) and in transitional psychology (112). In the initial adjustment period, shock was experienced in the form of anxiety and self -doubt, echoing the 'transition shock' described in newly graduated nurses when commencing practice (70, 109) and the entry experience of newcomers in organisational settings (110). I demonstrated how participants anticipated the abrupt nature of this transition even before starting work. Apprehension regarding having to play a more central role in clinical decision-making, and patient management with less support at night are areas of great concern for newly qualified doctors (6, 34, 35, 40, 61, 74, 242). This reflects awareness of their new status and responsibility (34, 40), and perhaps 'feelings of being forced to take on responsibilities and uncertainties of their new role' (35). Students can have high expectations of how they will perform as doctors, and in addition they may be uncertain regarding others' expectations of them in the workplace, both of which heighten their anxiety over the transition period (4, 6, 35, 210). Emotions such as uncertainty, fear of error, stress regarding decision making, of not living up to their own expectations or the expectations of others are implicated as major influences on new doctors behaviour and performance in the workplace (35). Participants in my studies also perceived a lack of preparedness for certain skills and competencies relating to the role of first year doctor, and in the early days of commencing work, they struggled with aspects

of the job, including dealing with acutely ill patients, working on call, time management and prioritisation, which have been identified as issues previously (74, 242, 471).

There is a disparity in the expectations of the contributions that medical students and newly graduated doctors make in the workplace resonating with the experience of nursing graduates (109). This is at odds with the gradual and progressive participation in practice espoused by workplace learning theories (107) and contributes to the abrupt nature of the transition described in my studies. It has been suggested that it is difficult to be fully prepared for practice, with performance contingent on experience within the context of the clinical workplace (5, 92). There have been calls therefore, for transitional interventions to be situated in real life (6, 91). However, it is of note that few of the transitional interventions reported in my scoping review employed real-patient contact. The majority of interventions involved some form of simulation instead. While the use of simulation in medical education has some benefits including the ability to schedule standardised learning opportunities in a controlled environment (449-452), it does not replicate the uncertainty and complexity of the real clinical context (7, 74). Therefore simulation as a teaching modality may be used to complement real-patient experience but not to replace it (80, 452).

My findings have highlighted areas where there is scope to improve the experience of the early transition period. We know that the stress of the initial transition is reduced by ‘early, meaningful, sustained and carefully structured patient contact in undergraduate education’ (6, 13, 247). Early exposure to the clinical workplace and opportunities to participate in patient care would support preparedness, providing ‘exposure to real practice in the real context with all the complexity and

crowdedness of the clinical environment' (59, 74, 88, 89, 107, 215, 247). Learners must be 'legitimate peripheral participants in ongoing practice in order for learning identities to be engaged and to develop into full participation' (107). My findings reinforce the need to strengthen experience-based learning (215), so that the role of senior medical student approximates the role of newly qualified doctor, particularly in terms of status and responsibility. Medical students need to assume clinical responsibility, incrementally over time, so that the transition to practice becomes just another step in a series of small steps, and any risk of transition-shock is diminished. This approach would also allow students to develop and maintain more realistic expectations of themselves grounded in clinical experience. Greater integration within the clinical team structure, and for longer periods (217), should facilitate both the development of status, and entrustment with responsibility for patient care. A workplace learning pedagogy for undergraduate medicine, such as Experience Based Learning (ExBL) may present a solution (215, 454).

Formal recognition of the early period of transition at organisational, institutional and ward level is important (92, 105), including building in the expectation of the initial underperformance of doctors when they commence practice, with the provision of increased early support and supervision (6, 34, 92, 105). My scoping review identified some studies that utilised peer involvement in transitional interventions. These interventions received positive feedback from participants, who appreciated the approachability of peers and their unique perspective into their educational requirements. This resonates with my findings, which reveal a number of positive elements within the workplace that eased the early transition for participants, including, support from peers and nursing colleagues, and the benefit of team integration. A period of overlap between incoming and outgoing first year

doctors, may alleviate the initial 'shock' experienced, by providing access to insiders for support and facilitating greater understanding of their new environment (243), and consideration should be given to prioritising posts with a conventional team structure. Faculty development would enable experienced workplace colleagues to better support their new colleagues (92). Consideration should also be given to the nature of provision of support to novice doctors during 'on call' hours (34). 'Hospital at Night', is an NHS initiative which employs a multidisciplinary team approach to out-of-hours work, involving multispecialty handovers, extended nursing roles, and bleep filtering. (472). The support of their nursing colleagues was greatly appreciated by participants in the early transition period; however, it is noteworthy that my scoping review identified that nurses were not commonly involved in the delivery of transitional interventions. The contribution of nurses in the early socialisation of new doctors, should be formalised (248) and interventions designed to facilitate nurses to appropriately support newly qualified doctors. Participation of nurses in new doctor orientation would also foster greater collegiality and role understanding (473).

7.3.2 Cultural, relational and contextual aspects of practice

While the skills and competencies required to carry out the role of a first year doctor were significant in participants' early transition experience, beyond this initial stage, my findings suggest that overlapping factors relating to cultural, relational and contextual aspects of clinical practice were more influential in participants' experience of the transition. These factors include, the power of the hidden curriculum, mistreatment and the medical hierarchy, inter-professional collaboration, and the clinical learning environment.

Hidden curriculum, mistreatment and medical hierarchy

My studies yield valuable new insights into the contribution of the hidden curriculum to the experience and actions of participants during the transition to practice. The attitudes and behaviours demonstrated by participants resonate strongly with the messages delivered by the hidden curriculum, with an expectation that doctors are perfect, the intolerance of uncertainty, the prioritisation of medicine over personal health and wellbeing, and the acceptance of hierarchy (221). In chapter 3, my exploration of the lived experience of anticipation of practice revealed that, even prior to setting foot on the ward as doctors, participants experienced anticipatory anxiety regarding actively seeking support, demonstrated an awareness of scrutiny, and acknowledged the potential for difficult workplace interactions, and challenges to their health and wellbeing. What they had seen and heard as undergraduates influenced their anticipated strategies of complying with all the demands of the workplace and not challenging negative behaviour directed towards them. This highlights the powerful socializing influence exerted by the medical culture regarding the meaning of being a doctor (108). My subsequent studies, detailing the experience of transition through the first year (chapter 4) and the experience of intra-professional mistreatment (chapter 5) shed additional light on the pervasive influence of the hidden curriculum. Participants compromised their own health and wellbeing in order to be viewed as competent by others and accepted mistreatment by senior doctors (221, 228). On completion of their first year of work, they retrospectively trivialised the challenges they experienced during the transition indicating denial or normalization of difficult or stressful experiences possibly in an attempt to demonstrate professionalism (61, 263).

The vulnerability of participants to mistreatment is evident throughout my studies. Participants described anticipating and experiencing mistreatment from more senior doctors and witnessed disrespect between doctors in the clinical workplace. This resonates with the extensive literature on the pervasive nature of bullying and harassment, and rude and aggressive communication in medical education (273, 278, 283). As participants had predicted, they did not challenge this behaviour for a number of reasons, including a perceived organisational tolerance towards it. The hidden curriculum, hierarchy and its power differential are profoundly associated with participants' vulnerability to, and acceptance of, mistreatment by senior doctors (220, 269, 272).

My findings highlight the necessity of addressing the hidden curriculum in medical education in an attempt to mitigate its negative effects. To achieve this will require deep cultural change. One strategy would be to focus on real patient learning experiences in the clinical context, and to afford medical students and residents time for guided reflection to promote identification and critical evaluation of the hidden curriculum and of professionalism. This would empower them to become active participants in their own professional identity formation (234, 474-476) and to become agents of change in the workplace (477). Promoting positive role models may also help mitigate the negative effects of the hidden curriculum. Interactions with other doctors can have a powerful, enduring influence on residents and are a significant factor in facilitating the hidden curriculum (221, 478, 479). Therefore, faculty development should support more senior staff to deliberately model and communicate appropriate professional behaviour including empathy and respect (225, 234, 283, 480, 481). A strong leadership commitment is vital, institutions should create an environment that supports senior doctors to be positive role models,

and residents should be facilitated to reflect on the behaviours of seniors to discern those who are worthy of imitation of their behaviour and values (283, 313, 482). Senior doctors may not perceive themselves as role models, so this should be made explicit, including the impacts of positive and negative role modelling behaviours, and being a good role model practiced as a deliberate process (483, 484).

In addition, focused interventions to tackle bullying and harassing behaviours should target organisational, team and individual levels, commencing with a zero tolerance policy of unprofessional behaviour (283). Policies should be established, transparently monitored and enforced at institutional level. Education should be aimed at all levels in healthcare organisations regarding the recognition and reporting of any problematic behaviour, and shared mental models regarding what qualifies as mistreatment developed. Committees should be established to deal with any reported issues and a resident support program instituted (278). Other potential interventions could include team building, education on communication and negotiation strategies, attention to the wellbeing of residents and faculty, and the early identification and remediation of problematic behaviour (283, 319, 475, 480, 485).

Inter-professional Collaboration

My studies provided an in-depth insight into new graduates' experience of relationships with their nursing colleagues from prior to commencing work. My first study revealed that participants' underlying tensions regarding their nursing colleagues existed even before commencing practice (chapter 3). On commencing work, nurses were appreciated as a valuable source of orientation and support, which has been reported previously (247, 248), however, inter-professional collaboration suffered as the year progressed. Professional silos, different working practices and

high work intensity contributed to the tensions described (251, 463). My findings regarding the influence of early workplace experience on inter-professional tensions resonate with those of Veerapen et al. In their phenomenological study of the inter-professional collaborative practice of recently graduated doctors and nurses, they argued that the culture and demands of the clinical workplace undermined the undergraduate education that these groups had received regarding inter-professional teamwork. Doctors and nurses in this study identified their roles as distinct and separate from each other, with teamwork coming into play only in the context of patient care emergencies and not existing at other times. There also existed no formal responsibility for residents between professions (486). Few of the reported interventions, implemented to ease the transition, identified in my scoping review, explicitly involved nursing or other healthcare professionals and only one had inter-professional learning as its main focus (381). Greater involvement of these groups may promote better inter-professional collaboration and legitimise the important role of nurses in the socialisation of new medical graduates (247).

To mitigate the intensification of inter-professional tensions over the course of the first year detailed in my studies, undergraduate and postgraduate education in inter-professional collaboration with the promotion of mutual respect, trust and teamwork should be a priority. Medical student shadowing of nurses for role understanding within the clinical context could be considered (487, 488). Interdisciplinary team training, can promote reflection leading to greater understanding of mutual roles and responsibilities (463). Organisational factors were identified as important barriers to collaborative practice in my study which has been reported previously (251, 463), therefore, organisational and cultural change should address the difficulties encountered, along with continuing inter-professional education in the postgraduate

setting, including instruction on negotiation strategies between the two groups (250, 251). One study, has reported that a collaborative approach to on-call hours, where residents work together with an advanced practice nurse, had positive effects on their workload, learning and relationships with nursing colleagues (464).

Clinical learning environment

It has been argued that it is not possible to be fully prepared for practice in medical school. Newly graduated doctors' learning and clinical performance is dependent on the clinical environment, therefore it is imperative that the transition be recognized as a critically intense learning period and supported as such by organizational practices and cultures (92). An effective clinical learning environment supports learners professional socialisation, health and wellbeing, and education as well as maintaining the quality of patient care (489). Participants in my studies experienced a suboptimal clinical learning environment with occasions where they worked long hours, were over-whelmed by a large workload, isolated by inadequate support, and exposed to unprofessional behaviour which resulted in negative effects to their health and wellbeing

Workload

Long hours, work intensity, conflicting demands, missing meals and lack of sleep contribute to increased stress, burnout, depression and anxiety (34, 36, 50, 490, 491). These pressures can create a barrier to personal growth, professional identity formation and learning, and can have an adverse impact on patient care (10, 21, 24, 30, 246, 262, 492-494). The constant interruptions by bleeps, which were reported as being particularly stressful in my studies, have been described previously (14, 50, 60, 495). In addition to being a stressor, frequent interruptions negatively affect

clinical performance, communication and handovers, can contribute to the perception of a greater workload, and cause fatigue and frustration (495).

My studies highlight the urgent need to re-evaluate the working environment of doctors in their first year of practice. It is incumbent on supervisors to make sure that residents are not overwhelmed by workload and long working hours (291). Many countries have introduced duty hour restrictions in an effort to regulate the number of hours a resident can work over a given time period. However, focusing on duty hours alone may not improve working conditions or patient safety (496). In fact, it has been suggested that duty hour restrictions may result in increased work intensity and complexity, with pressure to complete workload in less time (64, 497). Rather, the work content of residents should be examined to ensure that they are not overburdened and that service is not prioritised over educational needs. A potential strategy to reduce workload may be via the introduction of a limit on patient numbers per resident, with consideration to specialty and patient complexity, to designate the optimal caseload for reflection, learning and patient care (496, 498). Inefficient work practices should be remediated, for example by devising strategies to minimise interruptions and limiting the geographical distances that residents have to cover (498).

Support and Supervision

The negative and often distressing experiences of support and supervision in my studies reflect longstanding issues (34, 64, 84, 87, 490, 499). It is generally acknowledged that the quality of supervision provided to residents should be better (291, 323). Lack of support can negatively impact on confidence levels, contribute to stress, inhibit the clinical learning environment and adversely affects wellbeing (4, 19, 50, 61, 64, 246). Difficulty accessing support occurs mostly out of hours and is

specialty dependent, with surgery most often cited as lacking (6, 34). It is known that proximity and approachability influence trainee requests for clinical support and the experiences of participants in my studies, point to occasions where there were issues relating to both (225, 293).

Healthcare organisations must address issues within their own cultures and ensure that positive and supportive workplace relationships are fostered (328). Senior doctors play an important role in cultivating the confidence and competence of residents, by teaching, ensuring inclusion, giving feedback and modelling appropriate attitudes and behaviour (69). Supervisory approach, including clear communication, the use of appropriate language and the creation of a safe and non-judgemental environment has been proven to encourage residents to seek support appropriately (293, 329, 500). Wiese et al have highlighted the importance of fostering positive supervisory relationships over time and the need to prepare both supervisors and residents for their roles in ensuring effective supervision, with an emphasis on reflective practice and patient safety (328). This includes the education of senior residents who are responsible for supervising more junior doctors (291). Residents need to feel psychologically safe in the clinical environment, free to speak up and to seek support without fear of negative consequences. Psychological safety also refers to the learners' interactions with their team, with a well-functioning team contributing to enhanced satisfaction with the clinical learning environment (296). Therefore, a healthy inclusionary and welcoming environment is necessary where appropriate behaviours are modelled, teaching is valued, and time is allowed for reflection and feedback (479, 501).

Recognised barriers to a supervisors' ability to provide effective supervision, include their own high workload, the prioritisation of service requirements over education,

understaffing and lack of education with respect to their role as supervisors (290, 324). Organisations should ensure proper levels of staffing and work intensity for those in both supervisor and supervisee roles. Resident confidence in the individual providing supervision is also important, and senior supervisors need to ensure the maintenance of an appropriate standard of supervision when delegating supervisory activities to more junior staff (291). Doctors in their first year of work have suggested that they should be asked to provide feedback on senior residents who provide their clinical supervision, to counteract a discrepancy that may exist between senior residents' behaviour towards them, compared with how they present themselves to their Consultants (who evaluate them) (502). Another similar intervention includes a Consultant review of supervision requests and resulting actions each morning (503). A balance exists between resident supervision and facilitating autonomy, with the resident assuming increasing levels of responsibility over time, leading to independent practice. In considering this balance between supervision and autonomy when designing interventions to improve supervision, it should be taken into account that, although residents may sometimes perceive that autonomy drives learning most effectively, as is suggested in my study, guided practice, ('deliberate practice' with feedback, reflection, evaluation and repeated performance), appears to be more beneficial in the acquisition of expert performance (323, 504).

Wellbeing

In chapter 1, I outlined the negative effects that the transition to clinical practice has on the health and wellbeing of those in their first year of clinical practice (ref chapter 1). I have discussed a number of aspects of the transition, which have negative implications for participants' health and wellbeing, arising from my studies, such as

the shock described in the early transition period, mistreatment by senior doctors, inter-professional tensions and challenges with work intensity and lack of support. I have also discussed the permeating influence of the medical culture and the hidden curriculum across all aspects of the transition experience. I have included recommendations for practice arising from these findings. It is noteworthy that the transitional interventions reported in my scoping review mainly focused on preparation with respect to the skills and competencies required to work as a doctor, with minimal emphasis on the maintenance of the individual's health and wellbeing, reinforcing the prioritisation of competence over self-care instilled by the hidden curriculum (221).

The emotional and psychological dimensions of preparedness for practice are under emphasised in medical education (7). An exploration of first year doctors' preparedness narratives has demonstrated a predominance of negative emotional responses and a view that suppression rather than an outward display of emotion is preferable. Inappropriate regulation of emotion can have a negative impact on the individual's wellbeing and may negatively impact on patient care (505). Education and support for medical students and doctors regarding expression and regulation of emotions would benefit individual wellbeing as well as patient safety (505, 506). As it may not be possible to be fully prepared for the idiosyncrasies of the clinical workplace (92), the undergraduate curriculum could play a role in cultivating medical students' coping skills to negotiate the realities of the workplace (2). Experience based learning (ExBL) facilitates the learner to develop affective capability in addition to intellectual and practical capability. Affective capability encompasses mood, confidence, motivation, identity, attitudes, values and empathy and compassion towards others (454).

Recognition of the importance of resident wellbeing with positive leadership, staff empowerment, targeted interventions and the provision of resources promoting resilience and self-care is necessary. Undergraduate and postgraduate curricula should espouse a culture that promotes student and resident wellness and resilience. Other interventions, focused on the individual, could include resident wellness programs, coaching, mentorship and mindfulness (461, 507). However, interventions focusing on the individual are only one aspect of promoting wellness. Addressing the adverse aspects of the experience of transition as described in my studies will help to mitigate the negative consequences of this transition with respect to the health and wellbeing of first year doctors.

7.4 Recommendations

Because participants were recruited predominantly from one University and worked within one Intern Training Network, feedback regarding the results of my studies would assist future curricular development for the medical school and facilitate targeted interventions to address issues identified in the clinical learning environments of the healthcare settings.

7.5 Future Research

This research was conducted within one Intern Training Network in Southern Ireland. A study of the lived experience of the transition to clinical practice in other jurisdictions using IPA, and a comparison of the themes identified in this study would provide increased depth of understanding of the experience of the first year of practice. The perspectives of doctors during their transition to practice were explored

in this study. Further studies exploring the lived experience of working with newly graduated doctors as they commence work would provide further insights into our current understanding of this formative time. These studies could explore the perspectives of nurses and other allied healthcare professionals, doctors working within the team or from other specialties, or doctors providing support for first year doctors especially at night or on call.

7.6 Strengths and limitations

Interpretative phenomenological analysis is particularly effective for exploring experiences of existential importance to individuals, such as life transitions (132). By incorporating a longitudinal design, I ensured that I captured the temporal aspects of lived experience, producing a nuanced, in-depth understanding of the experience of transition from student to doctor. My scoping review revealed the extent of the current research activity into transitional interventions. The large number of databases searched, with no limitation regarding date of publication, and the inclusion of all study designs and methodologies is a strength of my review. The involvement of a team of researchers with experience in the subject and methodology of the study added to its validity.

There are some potential limitations to my findings. Regarding my phenomenological studies, as a member of medical school faculty, I was known to many participants. Although I am not involved in the intern programme, it is possible that participants were not fully open in their accounts. Therefore, there may be dimensions of the experience that remained below the surface, yielding an incomplete understanding of the transition. An additional consideration was that my

position as an ‘insider’ (with prior knowledge and experience of the topic of research) might negatively affect the interview process. I may not have probed certain answers sufficiently due to my familiarity with the subject. This may have resulted in aspects of participants’experience remaining underexplored. The majority of participants in this study attended the university aligned with the intern training network where they were about to commence work, which may be seen as a limitation in terms of wider applicability. It is my intention that conclusions drawn in the context of this study allow the reader to evaluate transferability to other similar settings.

The screening of the large number of studies identified in the research process for my scoping review was time consuming, but was assisted by the assembly of a research team. Although a number of databases and key journals were searched, in addition to reference and citation tracking of identified articles to yield further studies, it is still possible that some studies may not have been identified in this review. In addition, a lack of quality appraisal of studies identified may be interpreted as a limitation, however the aim of my scoping review was to provide a broad overview of the research activity in my chosen area rather than to answer a specific question, which may require quality appraisal and data synthesis, and would be more suited to a systematic review (201).

7.7 Conclusion

Using interpretative phenomenological analysis, I have explored in real time, the insider’s perspective of a complex, dynamic experience, situated within its particular context. My scoping review provided valuable information regarding deficiencies in

the nature of the interventions identified, study design, evaluation and implementation and areas for further research. The insights resulting from my work expand what is already known about the transition and my findings will inform interventions at undergraduate and postgraduate levels.

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Appendix A

Ethical Approval



iste na hOllscoile Corcaigh, Éire
versity College Cork, Ireland

Cork,
Ireland.

Our ref: ECM 4 (i) 07/07/15

26th May 2015

Dr Deirdre Bennett
Senior Lecturer
Department Medical Education Unit
Room 2.53 School of Medicine
University College Cork
Brookfield Health Sciences Complex
College Road
Cork

Re: Transition to Internship

Dear Dr Bennett

Expedited approval will be granted to carry out the above study at:

- Southern Intern Network & University College Cork

subject to receipt of the following:

- Insurance Certificate.

The following documents have been approved:

- Signed Application Form
- Study Protocol
- Information for Interview Participants/Consent Form
- Interview Schedule
- Pilot Focus Group Schedule.

We note that the co-investigators involved in this study will be:

- Dr Niamh Coakley, School of Medicine, UCC
- Professor Mary Horgan, Dean, School of Medicine
- Dr Carl Vaughan, Director Southern Intern Network
- Dr Paula O'Leary, Year 5 Co-Ordinator, School of Medicine, UCC.

Yours sincerely

Professor Michael G Molloy
Chairman
Clinical Research Ethics Committee
of the Cork Teaching Hospital

The Clinical Research Ethics Committee of the Cork Teaching Hospitals, UCC, is a recognised Ethics Committee under Regulation 7 of the European Communities (Clinical Trials on Medicinal Products for Human Use) Regulations 2004, and is authorised by the Department of Health and Children to carry out the ethical review of clinical trials of investigational medicinal products. The Committee is fully compliant with the Regulations as they relate to Ethics Committees and the conditions and principles of Good

From: Dowling, Maurice
Sent: 27 May 2015 10:01
To: Bennett, Deirdre; Heaphy, Leona
Subject: RE: Insurance for research project

Hi Leona,
I have looked at the study plan for Deirdre Bennett's study on Intern experiences.
As it will be surveying the Interns only (and not any patients), I am satisfied that this does not require notification to UCC's Clinical Trials policy.
Kind regards,
Muiris.

Dr. Muiris Dowling MCN 012445
Clinical Research Reporting Officer
Office of the Vice President for Research and Innovation Floor 4 Food Science Building University College Cork Tel. 021 4903115 Mob. 087 6245669

From: Bennett, Deirdre
Sent: 27 May 2015 09:29
To: Dowling, Maurice
Subject: Insurance for research project

Dear Muiris,

I had a call from Leona Heaphy in CREC yesterday to say that I need to get agreement from yourself that UCC will insure a project which I've submitted for ethical approval. I gather this is now a requirement for all research projects.

I'm attaching the CREC application and a study protocol. This is a low risk study which is about the experiences of medical interns and just involves conducting interviews and the recording of audio-diaries. CREC are granting provisional approval pending agreement on the insurance. The project start date is July 1st, so I would be grateful if you could advise me if there is anything else you need to reach your decision.

Many thanks,

Deirdre

Dr. Deirdre Bennett

Senior Lecturer in Medical Education

Appendix B

Information for Interview Participants and Consent Form

What is the purpose of this project?

The overarching aim of this research is to inquire into the experience of making the transition from medical student to intern and the subsequent experience of the intern year.

The study is concerned with linking experiences of transition and internship to undergraduate medical curricula, with a view to ensuring that medical graduates are prepared for practice in its widest sense.

Why have I been chosen?

You have been purposively selected from amongst the intern network group. Your selection has been on the basis of the location in which you are working and demographic data. The aim is to capture a variety of trainees to ensure a range of perspectives are represented.

Do I have to take part?

No. Participation is voluntary. There are no negative consequences should you prefer not to be involved. The Intern Training Network is not informed of who has been approached, who has been interviewed or who has declined.

Should you agree to take part you can terminate your participation at any time and are free to decline to answer any questions posed during the course of the interviews.

What's involved?

If you agree to be involved you will be invited to meet with the researcher for two interviews and to make some audio-diary recordings during your internship. The interviews will take less than an hour each and will be digitally recorded. All data is stored anonymously and your identity will be known only to the researcher. Any identifying elements within the interview itself will be anonymised. You will be asked for a follow up interview towards the end of your internship.

1. **The first interview** takes place before you start your internship will cover the following areas;

   Your thoughts about starting work as an intern; your expectations of different aspects of being an intern; how you expect you will be spending the working day; how confident you expect to feel in your work; whether you have any concerns about your readiness to work as an intern; how you will work with other doctors and allied health care professionals; what your expectations are in relation to working hours; the level of support you anticipate; the challenges you

expect to encounter; the opportunities you have had as a medical student to participate in patient care; the undergraduate curriculum and how well you feel it has prepared you?

2. Audio-diaries

You will be provided with a digital voice recorder and SD cards. You will be asked to make an audio-diary recording, at least every six weeks to eight weeks over the course of your internship. The subject of your recording should be recent experiences you have had in the course of job and how these have made you feel. We are trying to capture what it is like to be in your shoes and would like you to give accounts of things that have happened to you and your reaction to them. The audio-diary recording should be a minimum of 10 minutes in length. All data is stored anonymously and is confidential. Any identifying elements within the recording itself will be anonymised. Once transcribed the audio recordings will be deleted.

3. **The second interview**, towards the end of your internship will cover the following areas;

Looking back on your internship – what were the biggest challenges initially; how did these evolve over time; how did the experience compare to your expectations; what kind of work did you spend your time doing; how were your relationships with other doctors and allied healthcare professionals; what level of support did you receive; how did you cope with working hours; what kind of challenges did you encounter; how could the undergraduate curriculum have prepared you better?

What happens to the interview transcript?

The data collected at interview will be analysed qualitatively, for themes relating to the objectives of the project. Ultimately, anonymised quotes may be used in papers submitted to peer reviewed publications. Care will be taken to ensure that interns could not be identified from the content of their quotes.

Who is doing this research project?

This study is funded by the Intern Network Programme and is being conducted by Dr. Niamh Coakley, Lecturer in Medicine, UCC, with Dr. Deirdre Bennett, Senior Lecturer, School of Medicine, UCC and Prof. Mary Horgan, Dean, School of Medicine UCC. All data in this study is held by the researcher. The Intern Training Network will not have access to the raw data and any data seen by the Intern Training Network will be fully anonymised.

Does the study have ethical approval?

The study has been approved by the Clinical Research Ethics Committee of the Cork Regional Hospitals.

Participant Consent

If you are willing to take part in a recorded interview, with Dr. Coakley, under the conditions laid out above, please complete and sign the section below.

I, _____ , have read and understood the conditions laid out above. I agree to participate in a recorded interview on the topic my expectations /experience of internship. I understand that my interview will be transcribed and all identifiers will be removed from my interview before analysis. I also understand that extracts from my interview may eventually be published but that I will not be identifiable. I understand that I can withdraw from this process at any time and that in that case my interview will not be used.

Signed _____

Print Name _____

Date _____

Appendix C

Pilot Focus Group Interview Guide

What are your thoughts now at the end of the intern year about what it's been like to make the transition from student to intern?

What were your expectations regarding what being an intern would be like?

How did the initial experience align with your expectations?

What would you say were the main challenges you experienced in the first month or two?

How did these evolve over time?

How have you felt about yourself as a doctor over the course of the year?

Describe your confidence levels over the course of the year

What makes being an intern difficult – your skills and knowledge, the people you work with, the working hours, the tasks you are given....?

What makes being an intern easier? (same categories as above.)

What kind of working relationships have you had with other doctors and allied health care professionals?

Have you felt like a member of the "team"?

Have you had enough support clinically and otherwise?

How well do you feel the undergraduate curriculum has prepared you for internship?

Appendix D

Semi-structured Interview Guide

Interview 1: Expectations of Internship – to be conducted prior to commencing internship

What are your thoughts now about starting work as an intern in the coming weeks?

What do you think it will be like during the first couple of months working as an intern?

How do you expect you will be spending the working day?

How confident you expect to feel in your work?

Do you have any concerns at the moment about your readiness to work as an intern?

What kind of working relationships do you expect you will have with other doctors and allied health care professionals?

What your expectations are in relation to working hours?

What level of support do you anticipate having – during day time and on call?

What are the biggest challenges you expect to encounter?

As a medical student what opportunities have had to participate in patient care?

How well do you feel the undergraduate curriculum has prepared you for internship?

Interview 2 – to be conducted towards the end of internship

Looking back on your internship what were the biggest challenges you faced initially?

How did these evolve over time?

How did the experience compare to your expectations?

What kind of work did you spend your time doing?

How were your relationships with other doctors and allied healthcare professionals?

What level of support did you receive?

How did you cope with working hours?

What kind of challenges did you encounter?

How could the undergraduate curriculum have prepared you better?

Appendix E

Excerpt from reflexive diary

I interviewed xx today. As I commenced this research study, I was aware of the need to be reflexive, and of the requirement to make my position as a researcher transparent within the research process. As an 'insider' I considered my preconceptions about the experience of the transition of medical graduates to practice. I was aware that I may not fully appreciate all my attitudes and assumptions beforehand and that these may become apparent as the study proceeded. After my interview with xx today her statements about her reluctance to admit to needing help in order to demonstrate competence for the job resonated with me and my own past experience of being a first year doctor. I recalled an interaction with a colleague after we had a night 'on call' as interns, my intern colleague remarked, with what I perceived to be pride, that she had not needed to call for senior help at all for the duration of her shift. I had consulted with my senior house officer on a few occasions the previous night and I recall feeling deflated and a little inadequate that I had not been able to handle things on my own. This recollection of my own attitude towards seeking help at such an early stage in my career and how it contrasts with my current position as a clinical educator espousing an awareness of when to seek support and knowing ones' limits has surprised me. I will make a note of to discuss this at my next meeting with my supervisors.

Appendix F

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.	Click here to enter text.
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.	Click here to enter text.
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.	Click here to enter text.
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.	Click here to enter text.
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.	Click here to enter text.
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.	Click here to enter text.
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.	Click here to enter text.
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Click here to enter text.
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Click here to enter text.
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	Click here to enter text.

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
		processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Click here to enter text.
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).	Click here to enter text.
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	Click here to enter text.
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.	Click here to enter text.
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Click here to enter text.
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Click here to enter text.
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.	Click here to enter text.
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Click here to enter text.
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.	Click here to enter text.
Limitations	20	Discuss the limitations of the scoping review process.	Click here to enter text.
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.	Click here to enter text.
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.	Click here to enter text.

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 In

Appendix G

Scoping Review- Papers Identified and Bibliography

Authors	Year	Title	Country/ Specialty	Design	Intervention	Focus/ Teaching modality	Kirkpatrick's Evaluation	Participants/ Number	Duration	Outcome
Aboumatar et al (1)	2014	Focus on transitions of care: description and evaluation of an educational intervention for internal medicine resident	USA Internal Medicine	Mixed Methods Prepost and 3 months post One site No control	Workshop	Transitions of care-sign out and discharge Role playing Peer feedback Didactics Simulation	3	Residents 39	4 hours	Maj of interns were using the standardised method for sign outs taught in the SOS session.
Alcorn et al (2)	2013	Simulation for foundation year survival skills (SIM-FYSS)- Using simulation to teach medical undergraduates to care for elderly inpatients before entering the UK Foundation Programme	UK Geriatric Medicine	Quantitative Prepost One site No control	Course	Common medical problems in elderly patients Immersive simulation Reflective feedback Small group workshops	2a	Medical students 16	-----	Significant improvement in all domains except confusion
Alfonso et al (3)	2015	Simulation for foundation year survival skills (SIM-FYSS)- Using simulation to teach medical undergraduates to care for elderly inpatients before entering the UK Foundation Programme	USA Obstetrics and Gynaecology	Quantitative Prepost One site No control	Bootcamp	Clinical skills Labour and delivery shift	2a	Residents ----	1 day	Perception of improved preparedness and recognition of areas for improvement
Amick, C et al (4)	2017	A novel approach to emergency medicine resident orientation using the flipped classroom model	USA Emergency Medicine	Quantitative Prepost One site No control	Orientation	Knowledge/skills/ administration/ professionalism Small group sessions Workshops Skills training Real patients	2b	Residents 12	4 weeks	Improved knowledge
Antonoff M.B. et al (5)	2010	Improving the transition to surgical internship: Increased confidence and anxiety reduction through formal preparatory instruction	USA Surgery	Quantitative Prepost One site No control	Not enough information	Clinical/technical skills Surgical emergencies/daily patient care/medical records Interactive didactics Case scenario presentations	2a	Medical students 13	----	Improved confidence levels

Antonoff M.B. et al (6)	2009	A Novel Critical Skills Curriculum for Surgical Interns Incorporating Simulation Training Improves Readiness for Acute Inpatient Care	USA Surgery	Mixed Methods Prepost One site No control	Course	Acute care clinical/technical skills Didactics Simulation	2a	Residents 20	3 weeks	Improvement in knowledge
Antonoff M.B. et al (7)	2010	Improving surgery intern confidence through the implementation of expanded orientation sessions	USA Surgery	Quantitative Prepost One site No control	Orientation	Patient care/ Communication/ Administration Interactive didctics Case presentations Small group sessions Simulation	2a	Residents 21	2 days	Improved perceptions of preparedness and persistence at 1 month
Antonoff M.B. et al (8)	2012	The significant impact of a competency-based preparatory course for senior medical students entering surgical residency	USA Surgery	Mixed Methods Prepost 1 and 2 months post One site Non randomised controls	Course	Clinical /technical skills Interactive didactics, small group discussions, simulations mock page exercises	3	Medical students 22	½ days for 4 weeks	Performance review from supervising clinicians- performance advantage compared with peer at 1 month, not sustained at 2 months
Ataya et al (9)	2015	Emergency medicine residency boot camp curriculum: a pilot study	USA Emergency Medicine	Mixed Methods Prepost One site No control	Bootcamp	Clinical/technical skills Video/hands on teaching Simulation	2a	Residents 12	4 weeks	Improved self reported confidence
Avegno et al (10)	2012	Critical concepts: A multidisciplinary, multimodality approach to undergraduate education in the care of the acutely ill patient	USA Emergency Medicine	----------	Course	Clinical/technical skills- acute care critically ill patient Lectures Simulation Case discussion Skills practice Real patient care	--------	Medical students ------	4 weeks	High enthusiasm
Barra et al (11)	2018	Anesthesiology residents induction month: a pilot study showing an effective and safe way to train novice residents through simulation	Italy Anaesthetics	Quantitative Prepost One site Non randomised control group	Induction	Clinical/ Technical skills Lectures Small group sessions Demonstrations Simulation	2b	Residents 15	18 days	Improved performance in knowledge and skills assessment

Beane et al (12)	2017	Closing the theory to practice gap for newly qualified doctors: evaluation of a peer-delivered practical skills training course for newly qualified doctors in preparation for clinical practice	Sri Lanka General	Mixed Methods Prepost Multi site No control	Bootcamp	Acute care skills Skills satations Clinical scenarios Online discussions Online	2b	Residents 320	2 days	Improved objective knowledge and self perceived confidence and skills
Berridge et al (13)	2007	Bridging the gap: supporting the transition from medical student to practising doctor–a two-week preparation programme after graduation	UK General	Mixed methods Prepost Two sites No control	Induction	Clinical/technical skills/admin Tutorials Skills lab ALS/ALERT course Shadowing	2a	Residents 50	2 weeks	Improved perceptions of confidence and preparedness, persisted at 1 month
Bhatnagar, D et al (14)	2016	Night float 101: Entrustment of professional activities	USA Internal Medicine	Mixed methods Prepost One site No control	Subinternship	Acute issues/ Night time care Clinical/ Technical skills Small group sessions Simulation	2b	Medical students 40	4 weeks	Improved communication and decision making via evaluation with a standardised patient
Bhatraju et al (15)	2016	Revising residents' addiction experience: a 1-week intensive course	USA Internal Medicine	Mixed Methods Prepost One site No control	Course	Addiction Lectures Patient interviews Literature	2b	Residents ------	1 week	Improved knowledge and confidence
Boakes et al (16)	2017	Improving the transition from medical student to junior doctor: a one-month course in the final year of medical school	UK General	Mixed Methods Prepost and 1 month post One site No control	Course	Clinical and technical skills Lectures and clinical case scenarios	2a	Medical students 154	8 sessions over 4 weeks	Improved confidence
Boehler et al (17)	2004	A senior elective designed to prepare medical students for surgical residency	USA Surgery	Mixed Methods Prepost One site Non randomised controls	Course	Clinical/technical skills Cadaver dissections Surgical skills Real patient care Standardised patient Case based discussions Resident 'survival skills' Mock pages	2b	Medical students 12	4 weeks	Mean post test knowledge score higher than control score Practical sessions most valued Lack of opportunities for active participation in real patient care

Boehler et al (18)	2017	Mock pages are a valid construct for assessment of clinical decision making and interprofessional communication	USA Surgery	Quantitative Prospective graded assessment over 4 weeks Multisite	Course	Clinical decision making and communication Mock pages	2b	Medical students 213	4 weeks	Improved performance over time
Bontempo et al (19)	2017	The internship preparation camp at the university of Maryland	USA General	Mixed Methods Post One site No control	Bootcamp	Knowledge and procedural skills Small group learning Lectures Clinical skills labs	3	Medical students 65	3 days	Majority applied the information in workplace hourly/weekly/all used the info monthly
Braniff, C. et al (20)	2016	Assistantship improves medical students' perception of their preparedness for starting work	UK General	Mixed methods Prepost and post one year post One site No control	Assistantship	Clinical/ technical skills Real patient care	2a	Medical students 240	11 weeks	Increased perceptions of preparedness ? too long Variable experience
Breen et al (21)	2012	Scenario-based emergency care training and improvement in confidence levels of pre-graduation senior medical students	Ireland Emergency Care	Quantitative Prepost One site No control	Bootcamp	Emergency care clinical skills Lectures Skills stations Basic life support Automated External Defibrillator	2a	Medical students 520	2 days	Significant increase in confidence
Brunt et al (22)	2008	Accelerated Skills Preparation and Assessment for Senior Medical Students Entering Surgical Internship	USA Surgery	Quantitative Prepost One site Non randomised control for suture assessment	Course	Surgical skills and clinical skills Lecture Skills instruction	2b	Medical students 31	2-3 hours a week for 7 weeks	Self perceived improvement in knowledge and skills Improved suturing timings
Burns et al (23)	2016	A Brief Boot Camp for 4th-Year Medical Students Entering into Pediatric and Family Medicine Residencies	USA Paeds/Fam Medicine	Mixed Methods Prepost One site No control	Bootcamp	Clinical/technical skills, communication Lectures Small group presentations Role playing Simulation	2b	Medical students 16	5 days	Improved perfoemance in handoff and LP, not communication but participants had high performance prior

Burrill et al (24)	2017	UPSTART-training medical students in the recognition and treatment of critically unwell patients in resource poor environments	Sri Lanka General	Quantitative Prepost One site No control	Course	Assessment of critically unwell patiemts Lectures Small group workshops Simulation	2a	Medical students 180	1 day	Perceptions of confidence improved
Busing et al (25)	2018	Smoothing the Transition Points in Canadian Medical Education	Canada General	----------	Bootcamp	Clinical/technical skills Simulation	------	Medical students ---	6 weeks	Most course components were evaluated positively post intervention
Byrne, D et al (26)	2012	Preparing new doctors for clinical practice: an evaluation of pre-internship training	Ireland General	Mixed Methods. Prepost survey. One site. No control.	Course	Clinical/ technical skills Shadowing Included stress, health career advice Real patient care	2a	Medical Students 106	4 weeks	Increased perceptions of Preparedness 'less didactic lectures'
Chan et al (27)	2018	Technology-Enhanced Simulation Improves Trainee Readiness Transitioning to Cardiothoracic Training	USA Cardiothoracic Surgery	Mixed Methods Prepost One site No control	Workshop	Critical skills Didactics Simuations Mock oral exams	2b	Residents 25	5 hours	Improved knowledge scores
Coates et al (28)	2012	Transition to life--a sendoff to the real world for graduating medical students	USA Acute care	Mixed Methods Prepost One site No control	Course	Financial planning, real estate planning, physician well being time management, communication, support seeking Lectures	2a	Medical students 49	4 hours	Improved perceptions of confidence
Cohen at al (29)	2013	Making July safer: simulation-based mastery learning during intern boot camp	USA Internal Medicine	Mixed Methods Post Historical comparison group One site	Bootcamp	Clinical skills Simulation	2b	Residents 47	3 days	Better performance than historical controls
Coombes et al (30)	2007	Safe medication practice tutorials: a practical approach to preparing prescribers	Australia General	Quantitative Post Comparison group One site	Course	Prescribing Interactive problem based tutorials	2b	Medical students 99	8x90min tutorials	Improved knowledge scores compared with controls at end of year exam

Costello et al (31)	2010	The seamless transition from student to intern: from theory to practice	Australia General	Mixed Methods Post One site No control	Course	Prescribing, ALS, Intubation, Catheterisation, Plastering, Cannulation, Plastering, Lumbar Puncture, Suturing, Hand Hygeine, Death certification Simulation Case studies	2a	Medical students ?	1 hour a week for 30 weeks	Improved self perceived competency
Cotton, P et al (32)	2010	The university of Glasgow: "Preparation for Practice"- implementation and evaluation of a new student assistantship	UK General	Mixed Methods. Prepost survey. One site. No control.	Assistantship	Clinical/ technical skills ethics, law and risk life skills practical working as an FY1 Real patient care	2a	Medical Students 240	10 weeks	Increased perceptions of Preparedness
Crawford et al (33)	2009	Scenario?based student workshops in acute medicine	UK General	Post One site No control	Course	Acute patient care group discussion followed by a practical session with 3 clinical stations - students took history/exam, initial resus, investigations and treatment	1	Medical students 28	4 x 2 hour	Positive student feedback
Cunningham et al (34)	2014	Assessing and improving patient care skills through a bootcamp for new residents	USA Internal Medicine	Quantitative Prepost One site No control	Bootcamp	Clinical/technical skills Simulation	2a	Residents 68	1 day	Improvement in reported confort levels for various aspects of care
D'Cunha et al (35)	2011	Preparation of the medical student for cardiothoracic surgery training: Significant impact of a novel simulation-based course	USA Cardiothoracic Surgery	Quantitative Prepost One site No control	Course	Essential care cardiothoracic patients Didactics Simulation Skills labs	2b	Medical students 22	4 weeks	Increase in self perceived confidence and objective knwledge and skills assessment
De Lasson et al (36)	2016	Professional identity formation in the transition from medical school to working life: a qualitative study of group-coaching courses for junior doctors	Denmark General	Qualitative Post No control	Course	Group coaching for professional identity formation.	2a	Residents 45	4 months (3 days and 5x2hour sessions)	Coaching- found to be very helpful, inspiring new ways of dealing with everyday challenges. Disclosing uncertainty to peers without fear of negative judgement

Dehmer et al (37)	2011	Boot camp: a method of introducing the competency of professionalism to surgical residents	USA Surgery	Mixed Methods Prepost One site No control	Bootcamp	Clinical/technical skills professionalism/communication Team training Simulation	2b	Residents 18	2 days	Improved knowledge test
Desikan et al (38)	2016	History taking and presentation skills reboot: A workshop to boost confidence in interns	USA Paediatrics	Quantitative Prepost One site No control	Workshop	History taking and presentation skills Interactive workshop	2a	Residents 11	1 day	Improved perceptions of confidence
Devon et al (39)	2018	A Pediatric Pre-Intern Boot Camp: Program Development and Evaluation informed by a Conceptual Framework	USA Paediatrics	Mixed Methods Prepost and 6 months post One site No control	Bootcamp	Clinical/technical skills Simulations Case based discussions	2a	Medical students 40	1 week	Improved self efficacy post bootcamp with a modest improvement in confidence 6 months later
Duff et al (40)	1994	An orientation program for residents in obstetrics and gynaecology	USA Ostetrics and Gynaecology	------	Orientation	Clinical/technical skills Simulation Small group sessions Clinical and practical skills teaching	2a	Residents 10	5 days	Residents recognised the immediate applicability of training
Edwards et al (41)	2014	Nutrition education for medical students: 4th year transition to residency for primary care	USA General	--------	Workshop	Nutrition Education Interactive workshop	?	Medical students ?	2 hours	Increased perceptions of knowledge and skills
Esch et al (42)	2015	Preparing for the primary care clinic: An ambulatory boot camp for internal medicine interns	USA Internal Medicine	Quantitative Prepost One site No control	Orientation	 Case based sessions Orientation to clinic	2b	Residents 38	2 half days	Improved knowledge scores (same mcq pre and post)
Eskildsen M et al (43)	2010	Use of a virtual classroom in a new care transitions curriculum for fourth-year medical students	USA Internal Medicine	Quantitative Prepost One site No control	Subinternship	Transitions of care Face to face and online teaching and discussion	2b	Medical students 54	4 weeks	Improved confidence and knowledge
Esterl et al (44)	2006	Senior Medical Student "Boot Camp": Can Result in Increased Self-Confidence Before Starting Surgery Internships	USA Surgery	Mixed Methods Prepost One site No control	Bootcamp	Basic admin/technical/patient care skills. Clinical Didactics Simulation	2a	Medical students 16	4 weeks	Increased confidence Asked for ‘more hands on’ Too many students in ICU

Evans et al (45)	2004	The effect of an extended hospital induction on perceived confidence and assessed clinical skills of newly qualified pre-registration house officers	UK General	Quantitative Prepost One site No control	Induction	Clinical skills Lectures Shadowing Skills teaching	2b	Residents 24	5 days	Increased perceptions of preparedness except prescribing and death cert these disimproved initially but improved at 1 month Skills competence at OSCE improved post and further improved at 1 month into job
Faith et al (46)	2012	Improving confidence of medical students in rheumatology: Assessment of attitudes and intervention	Singapore Rheumatology	Quantitative Prepost One site No control	? more info	Rheumatology and joint examination Workshops	2a	Medical students 68	----	Increased perceptions of confidence in knowledge examination and diagnosis
Fernandez et al (47)	2012	Boot Camp: Educational Outcomes After 4 Successive Years of Preparatory Simulation-Based Training at Onset of Internship	USA Surgery	Quantitative Prepost One site No control	Course	Clinical/technical skills Simulation	2b	Residents 30	9 weeks (1-3hours weekly)	Improved cognitive and performance skills- correalate with subsequent evaluations
Fisher et al (48)	2007	Integrative clinical experience: an innovative program to prepare for internship	USA General	Quantitative	Course	Acutely unwell patient/communication/ teaching/ coping with stressors ***	2a	Medical students 83	2 weeks	Increase in perceptions of readiness for internship
Flynn et al (49)	2007	Intern orientation: the amazing case race	Australia General	Quantitative Post One site Comparison group	Orientation	Intern type tasks including case presentation-clinical and technical skills Virtual patient	1	Residents 40	5 days	Satisfaction with orientation
Ford et al (50)	2016	A comprehensive, high-quality orthopedic intern surgical skills program	USA Orthopaedic surgery	Quantitative Post One site No control	Course	Orthopaedic surgical skills Bone model/cadaver/surgical skills labs	1	Residents 5	89 hours over 4 weeks	Satisfaction with course
Frallicciardi et al (51)	2013	Board 157-Program Innovations Abstract Milestone One: A Simulation-based Residency Preparation Curriculum for Fourth Year Medical Students (submission# 190)	USA General	Quantitative Prepost One site No control	Bootcamp	Clinical\technical skills milestone 1 Simulation Patient care modules	2a	Medical students 15	2 weeks	Increased self efficacy(confidence) in procedures and patient care

Freeth et al (52)	2000	Helping medical students become good house officers: interprofessional learning in a skills centre	UK General	Mixed methods Post One site No control	Workshop	Interprofessional learning Simulation Interactive	1	Medical students 39	7 hours	Positive feedback
Frischknecht et al (53)	2014	How prepared are your interns to take calls? Results of a multi-institutional study of simulated pages to prepare medical students for surgery internship	USA Surgery	Quantitative Prepost 5 sites Comparison group	Course	Common 'floor'calls Mock pages-simulated phone calls with 'nurses'	2b	Medical students 150	Embedded in 4 week placement	Superior clinical decision making compared to non participants
Fullbrook A et al (54)	2015	Initial experiences of a student assistantship	UK General	Mixed Methods Post One site No control	Assistantship	Clinical technical skills Real patient care	2a	Medical students 248	2 weeks	Increased perceptions of preparedness Variable experience
Gershuni et al (55)	2013	Retention of suturing and knot-tying skills in senior medical students after proficiency-based training: Results of a prospective, randomized trial	USA Surgery	Quantitative Prepost One site Randomised controls	Course	Suturing and knot tying Lecture/skills lab/videos/home practice	2b	Medical students 11	4 weeks	Course delivered early in academic year - improved performance and skills retention compared to no training and to a traditional ''boot camp'' experience.
Goel et al (56)	2010	Structured internship orientation programme for undergraduate students: Easy transition to clinical work	India General	Mixed methods Prepost One site No control	Orientation	Familiarise with clinical tasks/role in community interactive lectures structured panel discussions, group discussions ethical and clinical role plays case scenarios	2b	Residents 19	1 and ½ days	Improvement in knowledge and attitudes towards patient care
Goldman et al (57)	2018	A Pre-surgical Residency Refresher Course that Advances Students from the Cadaver Lab to the Surgical Suite	USA Surgery/ Radiology	Quantitative post One site No control	Course	Surgical skills/anatomy/radiology Simulation/anatomy and radiology labs	2a	Medical students 10	4 weeks	Increased perceptions of knowledge and preparedness
Green et al (58)	2016	Evaluation of a surgery-based adjunct course for senior medical students entering surgical residencies	USA Surgery	Quantitative Prepost One site No control	Course	Surgical clinical snd technical skills Simulation	2b	Medical students 11	3 weeks (8x3 hour sessions)	Improvement in confidence and performance of technical skills
Green, Eric H et al (59)	2004	The Value of the Subinternship: A Survey of Fourth Year Medical Students	USA General	Mixed methods Post survey One site No control	Subinternship	Knowledge/ skills/ attitudes Real patient care	2a	Medical students 101	4 weeks	Increased perceptions of preparedness except complex communication skills

Haji et al (60)	2013	Teaching for the transition: The Canadian neurosurgery 'rookie camp' experience	Canada Neurosurgery	Mixed methods Prepost and 3 months One site No control	Boot camp	Technical, cognitive and behavioural skills Simulation	2b	Residents 17	------	Improved knowledge with no significant difference in retention test scores at 3 months
Hamm et al (61)	2015	The effects of an obstetrics and gynecology milestone 1 course on MS4 self-perceived confidence and competence	USA Obstetrics and Gynaecology	Quantitative Prepost One site No control	Not enough information	Obstetrics and gynaecology milestone competencies -------	2a	Medical students 13	-----	Improved perceptions of knowledge confidence and procedural competence
Harvey et al (62)	2015	Developing non–technical ward?round skills	UK General	Mixed methods Prepost One site No control	Course	Ward round skills Simulation	2a	Medical students 217	3 weeks	Perceptions of improved insight into challenges of ward rounds and ability to work as a team
Haslam et al (63)	2014	Junior doctor-led practical prescribing course	UK General	Mixed methods Prepost One site No control	Course	Prescribing Practical/interactive	2a	Medical students ---	5 sessions	Improved perceptions of abilities to prescribe
Heimroth et al (64)	2018	Utilizing surgical bootcamps to teach core entrustable professional activities to senior medical students	USA Surgery	Quantitative Prepost and 1 year One site No control	Boot camp	Patient care –surgical emergencies- clinical and technical skills (CAEPERS) Lectures Simulations	3	Medical students 9	4 weeks	Competence in all CAEPERS was demonstrated At one year all agreed that course was useful and positively impacted on year.
Hinkle et al (65)	2014	Feasability and reception of a post-match boot camp for fourth-year students based on milestone 1	USA Obstetrics and Gynaecology	Quantitative Post One site No control	Course	Obstetrics and gynaecology milestone 1 competencies ---------	2a	Medical students 8	4 weeks (4x ½ days)	Perceptions of improved knowledge
Hiraoka et al (66)	2013	A pilot structured resident orientation curriculum improves the confidence of incoming first-year obstetrics and gynecology residents	USA Obstetrics and Gynaecology	Quantitative Prepost One site No control	Orientation	Knowledge and skills lectures, online modules, simulations, and mock clinical scenarios.	2a	Residents 7	10 days	Improved confidence
Jones, A. et al (67)	2006	Learning the house officer role: reflections on the value of shadowing a PRHO	UK General	Qualitative Post study Two sites No control	Shadowing	Clinical/ Technical skills Real patient care	2a	Medical students 23	7 weeks	Increased perceptions of preparedness

Jones, Owen Meurig; et al (68)	2016	'He's going to be a doctor in August': a narrative interview study of medical students' and their educators' experiences of aligned and misaligned assistantships	UK General	Qualitative Two sites	Assistantship	Clinical/ Technical skills Real patient care	2a	Medical Students 27 (18 student controls/10 FY doctor/ 1consultant control)	7 weeks	Increased preparedness Aligned=better Variable experience
Jorwekar et al (69)	2018	Evaluation of aimpact of a structured orientation program on the first year postgraduate residents ' knowledge about curriculum and patient care	India General	Quantitative Prepost One site No control	Orientation	---- interactive lectures, group activity, demonstrations, video and web base	2b	Residents 55	2 and ½ days	Increased knowledge about curriculum and paient care
Joyce et al (70)	2015	An evaluation of the use of deliberate practice and simulation to train interns in requesting blood products	Ireland General	Quantitative Post One site Comparison group	Course	Haemovigilence-requesting blood products Simulation/deliberate practice	4	Medical students 28 (31 student controls/104 resident comparison group)	3 weeks	Less errors in ordering blood products compared with controls
Kalet et al (71)	2017	A simulated "Night-onCall" to assess and address the readiness-for-internship of transitioning medical students	USA General	Mixed methods Prospective	Boot camp	Night on call Immersive simulated	2b	Medical students 249	3 hours-3/9/16 days	Developed over 3 years, all CAEPERS addressed
Karakus et al (72)	2014	The preparedness level of final year medical students for an adequate medical approach to emergency cases: computer-based medical education in emergency medicine	Turkey Emergency Medicine	Quantitative Prepost One site No control	Boot camp	Patient care emergencies Simulation	2b	Medical students 17	1 day	Improved knowledge regarding correct medical approach to emergency patient care
Karpa et al (73)	2015	Medication safety curriculum: enhancing skills and changing behaviors	USA General	Quantitative Prepost One site Non randomised comparison group	Course	Medication safety Simulation/classroom discussions/real patients	4	Medical students 45	-----	Identification and correction of medication errors and improved paatient knowledge post intervention
Kavanagh, P et al (74)	2012	Evaluation of a Final Year Work-shadowing Attachment	UK General	Mixed methods Prepost One site No control	Shadowing	Clinical/ Technical skills Real patient care	2a	Medical students 106 (Supervisors 28)	4 weeks	Improves perceptions of preparedness except prescribing/emotional aspect

										Variable attendance
Ker et al (75) *****	2006	Can a ward simulation exercise achieve the realism that reflects the complexity of everyday practice junior doctors encounter?	UK General	Mixed methods Post One site No control	Course	Ward-clinical and practical skills Simulation	1	Residents 13	4 half days	Positive feedback
Kheir et al (76)	2017	Enhancing Medical Students' competency in emergency medicine related skills by boot camp training in low resource area	Africa Emergency	--- Prepost One site No control	Boot camp	Emergency medical clinical skills Simulation Didactic and scenario based teaching	2a	Medical students 82	8 days	Improved self assessed competence
Krajewski et al (77)	2013	Implementation of an intern boot camp curriculum to address clinical competencies under the new Accreditation Council for Graduate Medical Education supervision requirements and duty hour restrictions	USA Surgery	Mixed methods Post One site Comparison group	Course	Surgical clinical and technical skills Simulation/skills labs	3	Residents 18	2 months (twice a week)	Improved clinical behaviour and knowledge as perceived by nurses compared with previous years interns
Krautter et al (78)	2014	Improving ward round skills	Germany Internal Medicine	Quantitative Post One site Comparison group	Course	Ward round clinical and technical skills Real patients	2b	Medical students 36	8 weeks (10x1 hour sessions)	Improved performance in assessments compared with control group
Krishnan et al (79)	2017	Developing a Standardized Patient Curriculum to Teach Longitudinal Care: A Practical Electronic Health Record-Based Experience for Senior Medical Students	USA General	Mixed methods Post One site No control	Course	Longitudinal patient care/electronic health record Simulated patients	2a	Medical students 27	1 week	Helpful in preparedness
Laack et al (80)	2010	A 1-week simulated internship course helps prepare medical students for transition to residency	USA General	Mixed methods Post One site Comparison group	Boot camp	Patient care Simulation Problem based learning	2a	Medical students 12 (22 controls)	1 week	Good feedback re course No difference in perceptions of preparedness between boot camp and non boot camp Boot camp participants cited boot camp as contributing most to their preparedness

Lamba et al (81)	2016	A suggested emergency medicine boot camp curriculum for medical students based on the mapping of Core Entrustable Professional Activities to Emergency Medicine Level 1 milestones	USA Emergency Medicine	Mixed methods Prepost One site No control	Bootcamp	Clinical skills Simulation	2a	Medical students 9	1 day	Perceptions of increased knowledge and confidence
Lei et al (82)	2014	Board# 222-Program Innovation Creation of a Simulation-based Transition-to-Internship Curriculum for Graduating Medical School (Submission# 9555)	USA General	Quantitative Prepost One site No control	Boot camp	Clinical and technical skills Small group sessions Case based teaching Simulation	2a	Medical students 12	3 days	Inceased perceptions of confidence in 28/34 skills. Increased perceptions of preparedness
Lerner et al (83)	2018	Re-boot: Simulation Elective for Medical Students as Preparation Bootcamp for Obstetrics and Gynecology Residency	USA Obstetrics and Gynaecology	Mixed methods Prepost One site No control	Boot camp	Clinical and technical skills Simulation	2b	Medical students 10 (7 controls)	2 weeks	Improved knowledge scores in PrepforRes test
Leveson et al (84)	2010	Assessment of the value of a new undergraduate acute illness recognition course to current Foundation year 1 trainees	UK General	Mixed methods Post One site No control	Course	Acute illness recognition Plenary sessions/workshops/ common acute illness scenarios	3	Residents ---	2 days	Majority felt it helped them deal with similar situations in practice-1 year post intervention
Lewis et al (85)	2017	Participation in an emergency medicine bootcamp increases self-confidence at the start of residency	USA Emergency Medicine	Quantitative Post One site Comparison group	Bootcamp	Emergency medicine specific clinical skills Simulation Case based lectures	2a	Medical students 13 (8 controls)	4 weeks	Increased self perceived confidence
Lightman, E. et al (86)	2015	A prolonged assistantship for final-year students	UK General	Mixed methods Post survey One site No control	Assistantship	Clinical/ Technical skills Real patient care	2a	Medical students 156	6 weeks	Improved perceptions of preparedness and confidence Active participation better than didactic lectures
Long et al (87)	2013	The clinical impact of recognition and management of acutely ill surgical patient (ReMAP) course on FY1 assessment of an acutely unwell surgical patient	UK Surgery	Quantitative Retrospective chrt review Random selection Year preintervention Year post intervention	Not enough information	Recognition and management of acute surgical patients Simulation	3	Residents 60	-----	Improved documentation and appropriateness od senior review (chart review)

				One site						
Lucas et al (88)	2014	Developing a curriculum for emergency medicine residency orientation programs	USA Emergency Medicine	Mixed methods Post One site No control	Orientation	Clinical/technical skills/socialise simulation lab, lectures, teaching shifts in the ED, OSCEs	2a	Residents 11	4 weeks	Increased perceptions of preparedness
Lumley et al (89)	2013	An hour on call: simulation for medical students	UK General	Quantitative Post One site No control	Not enough information	On call/clinical/technical skills Simulation	2a	Medical students ---	2 hours	Perception of enhanced skills
Macartney et al (90)	2016	The A-Z guide to being a FY1-A peer-delivered handbook and complementing workshop	UK General	Mixed methods Post One site No control	Workshop	---------- Tips from outgoing F1 doctors	2a	Residents ---	----	Positive feedback
MacDowall et al (91)	2006	The assessment and treatment of the acutely ill patient—the role of the patient simulator as a teaching tool in the undergraduate programme	UK General and Emergency Medicine	Mixed methods Prepost One site No control	Course	Assessment and treatment of acutely ill patients Simulation	2a	Medical students 23	3x 2hour sessions	Perceived knowledge gains
Mahesh et al (92)	2018	Introduction of a skills boot camp for final year undergraduate medical students entering internship in General Medicine in a North Indian medical college: A pilot study	India General Medicine	Mixed methods Prepost One site No control	Bootcamp	Clinical and communication skills Simulation	2b	Residents 13	3 days	Increased knowledge
Marko et al (93)	2017	Obstetric skills competency curriculum for residency preparation	USA Obstetrics and Gynaecology	Quantitative Prepost Two sites No control	Course	Obstetrics skills (milestone 1 and 2) and team skills Simulation	2b	Medical students 48	----	Improved perception of preparedness
Matheson et al (94)	2010	The views of doctors in their first year of medical practice on the lasting impact of a preparation for house officer course they undertook as final year medical students	UK General	Mixed methods Retrospective randomised survey One site No control	Induction	Acute care/prescribing/time management/prioritisation /experiential learning/admin Shadowing Lectures/seminars	3	Residents 76	4 weeks	Shadowing deemed to be the most useful and effective part of induction(experiential learning) 1/3 agreed that lectues prepared them well 14% agreed that they drew on knowledge gained during lectures during first job

MacDonald et al (95)	2018	Transition to Residency: The Successful Development and Implementation of a Nonclinical Elective in Perioperative Management	Canada Surgery	Mixed methods Prepost One site No control	Course	Perioperative management Mock pages/simulation/ward based procedural work	2b	Medical students 20	1 week	Increased knowledge and clinical decision making
McGlynn et al (96)	2012	How we equip undergraduates with prioritisation skills using simulated teaching scenarios	UK General	Mixed methods Post One site No control	Bootcamp	Clinical skills especially prioritisation Simulation	1	Medical students ---	1 day	Positive feedback about participation
McGregor et al (97)	2012	Preparing medical students for clinical decision making: A pilot study exploring how students make decisions and the perceived impact of a clinical decision making teaching intervention	UK General	Qualitative Post interview 3 randomised groups One site	Not enough information	Prioritisation and clinical decision making Simulation/tutorial	2a	Medical students 23	----	Evidence of learning from post intervention interviews
McKenzie et al (98)	2017	Practically prepared? Pre-intern student views following an education package	Australia General	Quantitative Prepost One site No control	Course	Clinical and technical skills Intensive teaching/clinical attachment	2a	Medical students 41	3 days and 1 month	Perceptions of improved knowledge
McKinley, Robert K et al (99)	2018	An innovative long final year assistantship in general practice: description and evaluation	UK General Practice	Mixed methods Prepost survey One site Compared with National data	Assistantship	Clinical/ Technical skills Real patient care	2a	Medical students 350	15 weeks	Increased perceptions of learning/ preparedness Concerns re primary care vs secondary care
Meier et al (100)	2005	Implementation of a Web- and simulation-based curriculum to ease the transition from medical school to surgical internship	USA Surgery	Quantitative Prepost One site No control	Course	Commonly encountered on call Web and simulation based curriculum	2a	Medical students 17	Over 4 months	Incraesed perceptions of preparedness
Meier et al (101)	2012	A surgical simulation curriculum for senior medical students based on TeamSTEPPS	USA Surgery	Quantitative Prepost One site No control	Course	Team skills interactive didactic sessions, discussion groups, role-plays, and videotaped immersive simulation scenarios	2b	Medical students 17	----	Improved in observed team skills post intervention
Mendiratta et al (102)	2018	Geriatric boot camp: An effective transformational strategy	USA Geriatric Medicine	Quantitative Prepost One site No control	Bootcamp	Clinical skills – geriatric medicine Simulation	2a	Medical students ---	----	Increased self reported preparedness

						Group discussion Role play team based learning				
Min et al (103)	2014	Implementation of the Introductory Clinician Development Series: an optional boot camp for Emergency Medicine interns	USA Emergency Medicine	Mixed methods Post One site No control	Bootcamp	Clinical and technical skills Lectures Simulation	2a	Residents 12	5 days	Increased perceptions of preparedness
Minha et al (104)	2016	See one, sim one, do one- A national pre- internship boot-camp to ensure a safer "student to doctor" transition	Israel General	Quantitative Post Nationwide No control	Bootcamp	Clinical/technical skills Simulation	2a	Residents 806	5 days	Majority agreed that it was an essential component of their professional training
Mironova et al (105)	2014	surgical Preparatory Camp: A Novel Training Program for First-year Residents: ccme-og4-4	Canada Surgery	Quantitative Prepost One site No control	Bootcamp	Technical skills ---	----	Residents 54	2 weeks	Outcomes not reported
Mohamad et al (106)	2012	The neurology boot CAMP: Tackling the “july phenomenon”	USA Neurology	Quantitative Prepost and 8 months One site No control	Not enough information	Neurological emergencies/competency based education -------	2b	Residents ---	4 days	Improved knowledge post intervention
Moorhouse et al (107)	2016	I need a doctor in here now!' Using simulation to improve confidence in tomorrow's foundation doctors' acute care skills	UK General	Quantitative Prepost One site No control	Boot camp	Acute care clinical skills Simulations	2a	Medical students 25	-----	Improved confidence
Morgan et al (108)	2014	Preparing medical students for obstetrics and gynecology milestone level one: a description of a pilot curriculum	USA Obstetrics and Gynaecology	Quantitative Prepost One site No control	Course	Clinical and technical skills Lectures/flipped classroom/active learning/simulation	2b	Medical students 5	4 weeks	Improved knowledge and surgical skills
Morgan et al (109)	2017	Improving the medical school-residency transition	USA Obstetrics and Gynaecology	Quantitative Prepost One site No control	Course	Milestone 1 competencies (content developed from above study) Lectures/flipped classroom/active learning/simulation	2b	Medical students 13	4 weeks	Knowledge retention for 3 months post interventions
Morgan et al (110)	2018	Using simulation to prepare for clinical practice	UK General	Mixed methods Prepost One site No control	Bootcamp	Ward Round Preparation Simulation Feedback	2a	Medical students 133	60 mins	Improved confidence

Mughal et al (111)	2015	Development, evaluation, and delivery of an innovative national undergraduate surgical workshop: recognition and management of the acutely unwell surgical patient	UK Surgery	Quantitative Prepost and 8 weeks Nationwide No control	Workshop	Acutely unwell surgical patients simulations, lectures, case demonstrations, case discussions, and a basic surgicalskills tutorial	2b	Medical students 33	1 day	Improvement in knowledge
Muntz et al (112)	2010	Web-based cross-coverage simulations improve subinterns perceived preparedness for internship	USA General	Mixed methods Post One site No control	Subinternship	Cross coverage Instruction Web based simulations	2a	Medical students 50	----	Increased perceptions of preparedness
Naik et al (113)	2018	Personalized video feedback improves suturing skills of incoming general surgery trainees	USA Surgery	Quantitative Post One site Comparison group	Course	Surgical suturing skills Simulation/Video feedback	2b	Residents 28 (27 comparison group)	10 weeks	Improved suturing skill and speed in group that received feedback compared with 'no feedback' group
Nasir et al (114)	2018	Developing an Internship Preparedness Program for Final Year Medical Students	Australia General	Quantitative Post One site No control	Course	Non medical ward round skills Online and face to face teaching	1	Medical students ---	----	Feedback regarding intervention
Naylor et al (115)	2010	Preparing medical students to enter surgery residencies	USA Surgery	Quantitative Prepost One site No control	Course	Surgical clinical and technical skills Didactic/simulation/skills training/dissections	2b	Residents 9	4 weeks	Skills proficiency and improved confidence
Nikendei et al (116)	2007	An innovative model for teaching complex clinical procedures: integration of standardised patients into ward round training for final year students	Germany General	Qualitative One site No control	Bootcamp	Ward round skills Standardised patient Role play	1	Medical students 45	4 hours	Positive feedback
Nikendei et al (117)	2009	Effects of a supplementary final year curriculum on students' clinical reasoning skills as assessed by key-feature examination	Germany Internal Medicine	Mixed methods Prepost Comparison group	Course	Clinical reasoning skills/ward round/communication Interactive case based sessions/skills training	2b	Medical students 49 (25 controls)	3 months	Better exam scores post intervention compared with controls

Nuthalapaty et al (118)	2016	The Gynecology and Obstetrics Fundamentals of Residency Internship Training (GO FOR IT) Trial	USA Obstetrics and Gynaecology	Quantitative Prepost and 8 weeks Comparison group Multicenter	Bootcamp	Clinical /technical skills Simulation Lectures	2b	Medical students 21 (11compariso n group)	10 days	Improved competence, sustained at 8 weeks
Okusanya et al (119)	2012	The effect and durability of a pregraduation boot camp on the confidence of senior medical student entering surgical residencies	USA Surgery	Mixed methods Prepost and 6 months One site Comparison	Bootcamp	Technical and medical management skills Didactics Simulation	2a	Medical students 28 (9 comparison group)	5 days	Improved self confidence greater than controls post intervention at 6 months only difference was increased confidence in high risk infrequently performed tasks
Ong et al (120)	2018	Electronic health record ambulatory training for internal medicine interns	USA Internal Medicine/ Primary Care	Quantitative Prepost One site Comparison group	Workshop	EHR Training Desktop computer each	2a	Residents 31 (27 comparison group)	4 hours	Increased confidence
Pandian et al (121)	2017	At home preresidency preparation for general surgery internship: a pilot study	USA Surgery	Quantitative Post One site Comparison group	Course	Surgical suturing/ABG interpretation/radiology Video/simulation for at home preparation	2b	Residents 26 (32 comparison group)	-----	Improved knowledge and technical skills (knowledge better than technical skills)
Parent et al (122)	2010	Early, intermediate, and late effects of a surgical skills “boot camp” on an objective structured assessment of technical skills: a randomized controlled study	USA Surgery	Quantitative Post 0/1/6 months Randomised control group One site	Bootcamp	Surgical technical skills Simulation	2b	Residents 15 (13 comparison group)	2 and ½ days	Initial increased performance compared with controls initially, not sustained at 6 months
Park et al (123)	2018	The Use of a Social Media Based Curriculum for Newly Matched Interns Transitioning into Emergency Medicine Residency	USA Emergency Medicine	Mixed methods Post One site No control	Course	Communication, collaboration and cliical reasoning Interactive case based learning platform	2a	Residents 9	10 weeks	Improved percep
Parsons et al (124)	2016	Development of critical communication skills in a boot camp simulation curriculum for emergency medicine interns	USA Emergency Medicine	Quantitative Prepost One site No control	Bootcamp	Non technical skills- leadership, problem solving, communication Didactic Simulation	2b	Residents 15	2 weeks	Significant improvement in NTS

Peluso et al (125)	2017	Strengthening medical training programmes by focusing on professional transitions: a national bridging programme to prepare medical school graduates for their role as medical interns in Botswana	Africa General	Mixed methods Prepost One site No control	Orientation	Clinical and practical skills lectures, workshops, simulations, discussions, and reflection	2a	Residents 48	2 weeks	Perceived enhancement of knowledge, skills and expectations
Peyre et al (126)	2006	A surgical skills elective can improve student confidence prior to internship	USA Surgery	Quantitative Prepost One site Comparison group	Course	Surgery technical skills Anatomy/Skills labs	2a	Residents 6 (23 comparison group)	3 weeks	Higher perceived confidence level than comparison group
Pomfret et al (127)	2011	Junior doctors for junior doctors-'how to survive as a house officer?': An example of peer-assisted learning	UK General	Mixed methods Post One site No control	Workshop	---------- Peer led morning with outgoing F1	1	Medical students >250	½ day	Positive feedback
Qureshi et al (128)	2018	Preparation for making clinical referrals	UK General	Post One site No control	Workshop	Clinical Referrals Interactive group session	1	Medical students 96	90 mins	Positive feedback
Rabago et al (129)	2017	Learning outcomes evaluation of a simulation-based introductory course to anaesthesia	Spain Anaesthetics	Quantitative Post One site No control	Bootcamp	Anaesthetics skills Simulation	3	Residents 12	4 days	Transfer of skills to real patients assessed and achieved
Ravindran et al (130)	2017	P68 A pilot programme to facilitate the induction of foundation year one surgical doctors	UK Surgery	Quantitative Prepost One site No control	Bootcamp	On call clinical challenges Immersive scenario simulations	2a	Residents ----	½ day	Improved confidence
Reed et al (131)	2017	Preparing medical students for foundation placements in plastic surgery: A one day intensive course	UK Plastic surgery	Quantitative Prepost One site No control	Workshop	Plastic surgery clinical and practical skills Lecture Skills stations	2a	Medical students 32	1 day	Improved confidence
Reilly et al (132)	2007	Physician, heal thyself: tools for resident well-being	USA General	Quantitative Post One site No control	Workshop	Wellness Workshop	1	Residents 21	1 day	Felt valued by faculty Appreciated focus on own self care
Rialon et al (133)	2013	Resident designed intern orientation to address the new ACGME Common Program Requirements for resident supervision	USA	Quantitative Prepost One site No control	Orientation	Clinical/technical skills Didactic and case-based lecture and simulation exercises; intern shadowing	2b	Residents 27	2 days	Improved confidence and knowledge scores. Improvement in tasks reviewed during shadowing
Rogers et al	2014	A randomised controlled trial	Australia	Quantitative	Bootcamp	Clinical /technical skills	2b	Medical	2 weeks	Improved knowledge

(134)		of extended immersion in multi-method continuing simulation to prepare senior medical students for practice as junior doctors	General	Post One site Randomised control group		Simulation		students 45 (39 randomised control)		acquisition, reasoning and resuitation skills, with long term retention of improved prescribing skills
Roth et al (135)	2002	A communication assessment and skill-building exercise (CASE) for first-year residents	USA	Quantitative Post One site No control	Workshop	Communication Workshop	2a	Residents 26	4x 10 mins	Improved confidence
Ryan, P. S. J et al (136)	2017	Preparation for practice: a novel role for general practice in pre-foundation assistantships	UK General Practice	Qualitative One site No control	Assistantship	Clinical/ practical skills/ esp primary care Real patient care	2a	Medical Students 12	1 week	Increased perception of competence
Salzman et al (137)	2016	Use of a simulation-based capstone course to teach and assess entrustable professional activities to graduating medical students	USA General	Quantitative Prepost One site No control	Bootcamp	Clinical/technical skills Simulation	2b	Medical students 35	3 days	Improved assessed performance
Scoolfield et al (138)	2016	Evaluating the effectiveness of the general surgery intern boot camp	USA Surgery	Quantitative Prepost One site No control	Bootcamp	Clinical/technical skills Didactics Simulation	2a	Residents 21	2 days	Significant increase in overall confidence levels
Schwind et al (139)	2011	Use of simulated pages to prepare medical students for internship and improve patient safety	USA	Quantitative Prepost One site No control	Course	Patient management Simulated pages	2a	Medical students 16	During 4 weeks	Perceptions of confidence increased. Mean performance scores varied depending on scenario
Scicluna et al (140)	2014	Improving the transition from medical school to internship - evaluation of a preparation for internship course	Australia General	Quantitative Prepost One site No control	Assistantship	Clinical /technical skills Tutorials Real patient care	2a	Medical students 253	6 weeks	Improved perceptions of capability
Scobie et al (141)	2003 UK	Meeting the challenge of prescribing and administering medicines safely: structured teaching and assessment for final year medical students	UK General	Quantitative Post Two sites Randomised control	Workshop	Prescribing skills Practical exercises rotating in small groups	2b	Medical students 20 (20 controls)	5x 20 mins	Better performance at OSCE
Scott-Kelley et al (142)	2018	A Four Week Residency Preparation Course:“Boot Camp” Description and Early Outcomes	USA Family Medicine	Quantitative Prepost One site No control	Bootcamp	Clinical/technical skills Lectures Simulation	2b	Medical students 8	4 weeks	Increased knowledge and competence on assessment

Selden et al (143)	2012	A National Fundamentals Curriculum for Neurosurgery PGY1 Residents: The 2010 Society of Neurological Surgeons Boot Camp Courses	USA Neurosurgery	Quantitative Prepost Multi site No control	Bootcamp	Clinical skills, knowledge and attitudes Didactics Simulation	2b	Residents 186	3 days	Improved knowledge post intervention
Shaw et al (144)	2011	Foundation Doctor Led Practical Prescribing Tutorials- A Structured, Standardised and Feasible Approach to High Quality Teaching on Prescription Writing, to Final Med Students by Foundation Doctors	UK General	Quantitative Post One site No control	Course	Prescribing Small group tutorials	2a	Medical students 108	------	Perception of knowledge gained
Shekhter et al (145)	2009	Creating a common patient safety denominator: the interns' course	USA General	Quantitative Post One site No control	Course	Patient safety course Interactive session/web based didactics/simulation	2a	Residents 131	3 days	Perception of new teamwork skills, better appreciation of patient safety, better prepared to function in the clinical area
Singh et al (146)	2015	An immersive "simulation week" enhances clinical performance of incoming surgical interns improved performance persists at 6 months follow-up	USA Surgery	Quantitative Prepost One site No control	Bootcamp	Clinical/technical skills Simulation	2b	Residents 10 (6 comparison group)	1 week	Intervention group outperformed control group at 0, 6 month follow up in clinical OSCE and technical skills assessment
Sinha et al (147)	2015	Interns' Day in Surgery: improving intern performance through a simulation-based course for final year medical students	Australia Surgery	Quantitative Prepost One site No control	Bootcamp	Clinical skills Simulation	2a	Medical students ---	1 day	Perceived improvement in all element taught erpecially case presentation and patient communication
Smith et al (148)	2018	Surgical pathology “Boot Camp”: A military experience	USA Surgical Pathology	Quantitative Prepost One site No control	Course	Surgical pathology Didactic microscopic/gross pathology conference	2b	Residents 6	4 weeks	Improved knowledge and practical skills
Smith et al (149)	2012	Pre-prescribing: A safe way to learn at work?	UK General		Course	Prescribing Prescription writing	------	Medical students 12	7 weeks	Successful implementation of intervention
Sonnadara et al (150)	2011	Orthopedic boot camp: Examining the effectiveness of an intensive surgical skills course	Canada Surgery	Quantitative Prepost One site Comparison group	Bootcamp	Surgical skills Lectures Simulation Dissection	2b	Residents 6 (16 comparison group)	30 days	Intervention group outperformed control group

Sorge et al (151)	2017	A practical curriculum for emergency medicine intern orientation using near-peer teaching	USA Emergency Medicine	Quantitative Prepost One site No control	Orientation	Clinical skills Interactive workshops, practice-based learning and near-peer teaching, didactic lectures	1	Residents --	4 weeks	Received well.
Steffes et al (152)	2014	Faculty led senior medical student skills course effectively prepares students for surgery residency	USA Surgery	Quantitative Post One site No control	Bootcamp	Surgical skills Simulation Dissection	2a	Medical students 111	4 weeks	Perception of increased preparedness
Szyld et al (153)	2017	Improving the Clinical Skills Performance of Graduating Medical Students Using “wise Oncall,” a Multimedia Educational Module	USA General	Quantitative Prepost One site No control	Workshop	clinical coverage issues: assessing a patient complaint, responding to a page on call, documenting Case based simulated scenarios	2b	Medical students 52	3 hours	Moderate to large improvement in performance
Tavabie et al (154)	2012	Preparing final?year students for medical emergencies	UK General	Quantitative Prepost One site No control	Bootcamp	Acutely unwell patients Discussion Simulation	2a	Medical students ----	4 weeks	Significantly increased understanding for some on call responsibilities. Some improvement in confidence to perform day team role
Teagle et al (155)	2017	Preparing medical students for clinical practice: easing the transition	UK General	Quantitative Post One site No control	Bootcamp	Clinical skills- ward round prescribing, handover, patients charts Simulation	2a	Residents 120	3 days	Overall confidence improved. Increased confidence with prescribing
Teo et al (156)	2011	The key role of a transition course in preparing medical students for internship	USA General	Quantitative Prepost One site No control 5 years	Course	Management of common clinical conditions, medical emergencies, communication, procedures, and life skills Lectures Skills sessions small and large group sessions	2a	Medical students ---	Over 1 year	Improved perceptions of preparedness
Tittle et al (157)	2014	Practical prescribing course: A student evaluation	UK General	Qualitative Post	Course	Practical prescribing Small group tutorial/shadowing phaemacists	2a	Medical students 18	-----	Perceptions of increased confidence

Tobias et al (158)	2012	"get ready for residency": An innovative elective for senior medical students	USA General	Quantitative Post One site No control	Bootcamp	Ill patients, outpatients, communication Didactics Simulation	1	Medical students ----	4 weeks	Rated by the majority as good/excellent
Tocco et al (159)	2013	Innovation in internship preparation: an operative anatomy course increases senior medical students' knowledge and confidence	USA Surgery	Quantitative Prepost One site No control	Bootcamp	Operative anatomy, surgical complications Dissections Simulations	2b	Medical students 23	5 days	Increased perception of confidence and objective knowledge assessment
Todd et al (160)	2011	Surgical intern survival skills curriculum as an intern: Does it help?	USA Surgery	Quantitative Prepost One site No control	Course	Survival skills-multifaceted Lectures/interactive sessions/simulation	2a	Residents 8	4 weeks (16 x 1 hour sessions)	Perceptions of increased confidence in most of elements assessed
Tschirhart et al (161)	2016	Does an intensive and multimodal intern boot-camp prepare incoming residents for level 1 milestones?	USA Obstetrics and Gynaecology	Quantitative Prepost One site No control	Not enough information	------- Lectures/simulations/ e modules	2b	Residents ----	----	Improved prep-for-res knowledge scores
Vairy et al (162)	2018	Transitioning from medical school to residency: Evaluation of an innovative immersion rotation for PGY-1 paediatric residents	USA Paediatrics	Quantitative Prepost One site No control	Bootcamp	Clinical and technical skills Simulation Didactic Real patient exposure	2a	Residents 11	4 weeks	General improvement in confidence levels
Wade et al (163)	2015	Outcomes of a proficiency-based skills curriculum at the beginning of the fourth year for senior medical students entering surgery	USA Surgery	Quantitative Post One site Comparison group	Course	Clinical and technical skills Didactic Hands on skills Small group sessions	2b	Medical students 20 (14 comparison group)	6 weeks (once weekly 3 hour sessions)	Proficiency targets met when teaching occurs early in year. Faster times for 3 of 5 skills and better scores for some technical skills compared with comparison group
Wald et al (164)	2010	Medical student perceptions of an end of fourth year clinical skills program	USA General	Quantitative Post One site No control	Workshop	Code/Arrythmia Clinical skills stations	1	Medical students 106	2 hours	Increased perceptions of preparedness for cardiovascular emergencies
Wald et al (165)	2013	Development of a simulated "night on call" experience within a capstone course at one U.S. Medical school	USA General	Quantitative Post One site No control	Bootcamp	Night on call Acute scenarios – simulation	2a	Medical students 135	2 hours	Valuable experience. emergencies

Walker et al (166)	2007	Innovative orientation: a treasure hunt in Foundation Year one	UK General	Quantitative Post One site No control	Orientation	Orientation –simulated scenario Tasks involving clinical vignettes/jobs-treasure hunt	1	Medical students 2	1 day	Well received
Watmough et al (167)	2016	Unexpected medical undergraduate simulation training (UMUST): can unexpected medical simulation scenarios help prepare medical students for the transition to foundation year doctor?	UK General	Mixed methods Post One site No control	Course	Emergency situation Simulation	2a	Medical students 33	4 sessions over 2 months	Perceptions of improved preparedness
Wayne et al (168)	2014	Progress toward improving medical school graduates' skills via a "boot camp" curriculum	USA Internal Medicine	Quantitative Post One site Comparison groups	Bootcamp	Clinical and technical skills Didactics Simulation	2b	Medical students 20 (155 comparison group)	2 days	Clinical skills performed better by intervention group than controls
Williams et al (169)	2010	Transitioning to internship: Development of a palliative care boot camp for graduating medical students: A qualitative analyses of a pilot program	USA Palliative Care	Qualitative Post One site No control	Workshop	End of life assessment and communication Simulation-standardised patients Didactics	2a	Medical students 17	3 hours	All scenarios improved readiness and provided a platform for discussion
Willis et al (170)	2013	Usefulness of the American College of Surgeons' Fundamentals of Surgery Curriculum as a knowledge preparatory tool for incoming surgery interns	USA Surgery	Quantitative Post One site Randomised control group	Course	Patient assessment and management Case based scenarios/online modules	2b	Residents 20	----	Higher post intervention knowledge scores than comparison group
Wilson et al (171)	2018	Medical Students Preparation for Practice	UK General	Quantitative Post One site No control	Not enough information	Assessment of a deteriorating patient Simulation	2a	Medical students -----	------	Perceptions of increased confidence
Winn et al (172)	2018	Development, Implementation, and Assessment of the Intensive Clinical Orientation for Residents (ICOR)Curriculum: A Pilot Intervention to Improve Intern Clinical Preparedness	USA Paediatrics	Quantitative Post One site Randomised control group	Orientation	Clinical and technical skills Patient care interactive workshops, utilizing lectures, small-group discussions, role-play, and problem-based learning	2a	Residents 24 (24 randomised control group)	3 and ½ days	Perceptions of increased confidence and preparedness

Wunder et al (173)	2018	A surgical residency preparatory course for senior medical students leads to earlier independence in ACGME competencies	USA Surgery	Quantitative Prepost Comparison groups	Course	Skills and cognitive tasks required of surgical interns Small group discussion and faculty led instruction	3	Medical students 9 (21comparison groups)	4 weeks	Earlier time to independence in patient management and procedural competence than comparison group
Yaylac et al (174)	2015	Five-Day Simulated Boot Camp Helps Prepare Medical Students for Transition to Internship Emergency Medicine Rotation	Turkey Emergency Medicine	Post One site No control	Bootcamp	Clinical /technical skills for clinical problems in Emergency Department Simulation	?	Residents 6	5 days	?Positive feedback
Young et al (175)	2017	10 months and counting? are you ready to safely manage your ward? A pilot study evaluating the impact of a simulated surgical ward round for final year medical students	UK Surgery	Quantitative Prepost One site No control	???	Surgical ward round training Simulation	2a	Medical students 25	?	Increase in self perceived knowledge and confidence
Yu et al (176)	2016	A regional resident readiness course to facilitate the transition from student to doctor	USA Obstetrics and Gynaecology	Mixed Methods Prepost Three Medical Schools No control	Bootcamp	To meet Obstetrics and Gynaecology milestone 1 Lecture Case based Simulation	2b	Medical students 13	2 weeks	Improved confidence and improvement in APGO knowledge test (non significant)

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Appendix H

Scoping Review- Tables and Figures

Table (i): Country of origin of identified papers

Country	Number of studies
USA	100
UK	43
Australia	8
Canada	5
India	3
Germany	3
Ireland	3
Turkey	2
Sri Lanka	2
Italy	1
Denmark	1
Israel	1
Spain	1
Sudan	1
Botswana	1
Singapore	1

Table (ii): Intervention specialty

Specialty	**Number of studies**
Specialty Neutral	73
General Surgery	42
Emergency Medicine	16
Internal Medicine	11
Obstetrics and Gynaecology	12
Paediatrics	5
General Practice	3
Neurosurgery	2
Cardiothoracic Surgery	2
Anaesthetics	2
Geriatric Medicine	2
Orthopaedics	1
Rheumatology	1
Neurology	1
Palliative Care	1
Plastic Surgery	1
Pathology	1

Table (iii): Study design of identified papers

Study Design		Number of Studies(%)
One Group	Post test	39(22%)
	Prepost test	89(50%)
	Retrospective survey	2(1%)
	Retrospective randomised survey	1(1%)
	Retrospective interview study	1(1%)
	Observational Study	3(2%)
	Prospective graded assessment over 4 weeks	1(1%)
Two groups	Two groups post test	13(7%)
	Two groups prepost test	14(8%)
	Randomised controlled post test	4(2%)
	Randomised controlled prepost test	1(1%)
	Retrospective randomised chart review	1(1%)
Three groups	3 groups post test	1(1%)
Unspecified		6(4%)

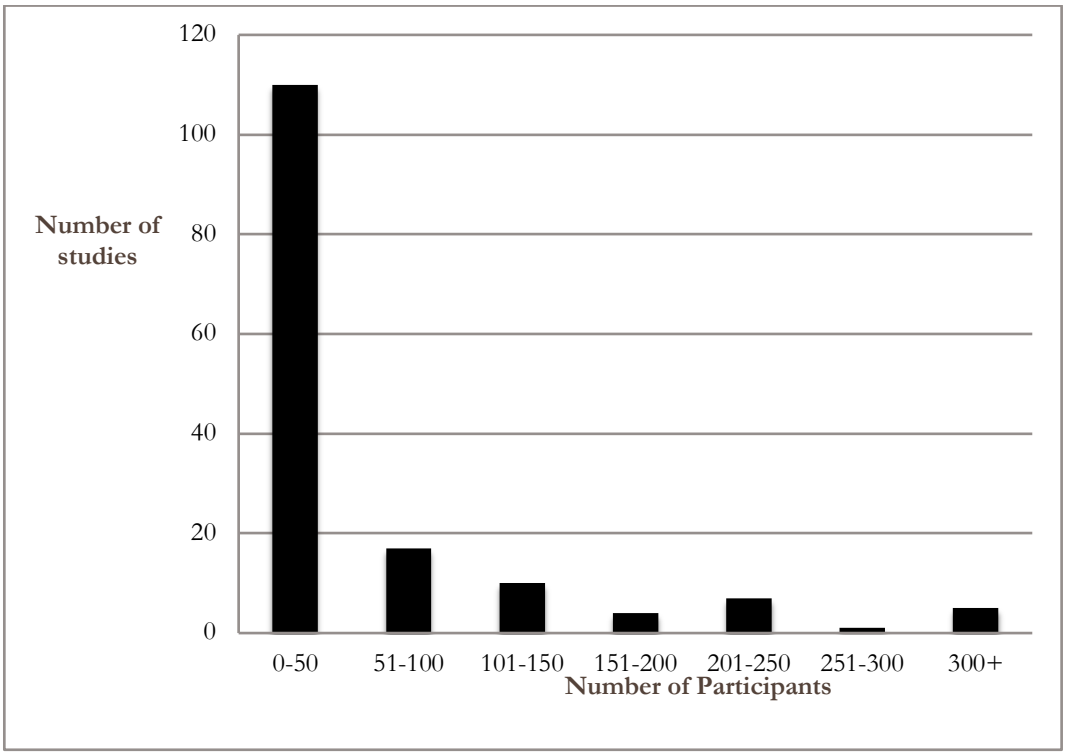


Figure (i): Sample size for interventions

(Numbers unspecified in 22 papers.)

Table (iv): Delivery of interventions

Interventions delivered by;	Number of Studies
Faculty	45
Doctors	79
Nurses	20
Pharmacists	8
Anatomy Department	1
Respiratory therapists	1
Paramedics	1
Administration/ Human Resources/ Information Technology	3
Librarian	1
Psychologists	1
Simulation instructors	3
Healthcare experts	1
Patient safety specialists	1

Table (v): 'Doctor delivered' interventions

**Breakdown of 'Doctor Delivered Interventions'*	
Doctors in general	20
Senior Doctors/Specialists	46
Junior Doctor/Foundation Doctor	7
Peer/F1 delivered	6

Table (vi): Content of interventions

Content-main focus	Studies
Multifaceted focus– patient care and management, clinical and procedural skills.	143
Procedural skills	7
Prescribing/medication safety	6
Transitioning care	2
Mock pages	2
Professional identity formation	1
Nutrition	1
Interprofessional patient care	1
Haemovigilance	1
Longitudinal patient care encounters	1
Prioritisation	1
Clinical decision making	1
Team skills	1
Cross coverage	1
Electronic Health Records	1
Non technical skills (leadership, problem solving, communication, teamwork, situational awareness, and resource utilization)	1
Clinical referrals	1
Pathology	1
End of Life Communication	1
Physician wellbeing and health awareness	1
Financial planning, real estate intern preparedness and physician wellness	1

Appendix I

Publications and Conference Contributions

Publications:

1. Experience-based learning; Supporting the transition from student to doctor

   N Coakley, P O'Leary, D Bennett –Medical Education 2020

2. 'Waiting in the wings'; Lived experience at the threshold of clinical practice

   N Coakley, P O'Leary, D Bennett - Medical Education, 2019

Abstracts:

1. ASME (Association for the Study of Medical Education) 2016 Annual Scientific Meeting, Belfast, Ireland.

   Poster presentation: *'Transition to Clinical Practice: A longitudinal study of the first year as a doctor'* **N Coakley**, P O'Leary, M Horgan, D Bennett

2. INMED (Irish Network of Medical Educators) 2018 Annual Scientific Meeting, Cork, Ireland.

   Oral presentation: *'Transition to Clinical Practice: Expectations of Experience'* **N Coakley**, P O'Leary, D Bennett (Awarded best oral presentation)

   Oral Presentation: *'Transition to Clinical Practice: Experience of Transition'* **N Coakley**, P O'Leary, D Bennett

3. INMED (Irish Network of Medical Educators) 2019 Annual Scientific Meeting, Galway, Ireland.

   Oral Presentation: *'A scoping review of interventions to support the transition from medical student to doctor'* **N Coakley**, A Wiese, A Joy, H Hynes, P O'Leary, D Bennett.

4. AMEE (Association for Medical Education Europe) 2019 Annual Scientific Meeting, Vienna, Austria.

   Poster presentation: *'A Scoping Review of Interventions to Support the Transition from Medical Student to Doctor'* **N Coakley**, A Wiese, A Joy, H Hynes, P O'Leary, D Bennett.

5. INHED (Irish Network of Healthcare Educators) 2020 Annual Scientific Meeting, Dublin, Ireland.

   Oral presentation: *'Interventions to support the transition from medical student to doctor: A Scoping Review'* **N Coakley**, A Wiese, A Joy, H Hynes, P O'Leary, D Bennett.

   Oral presentation: '*A longitudinal study of the lived experience of relationships with other doctors during the transition to clinical practice'* **N Coakley**, P O'Leary, D Bennett.

Awards and Prizes:

1. Best oral presentation- INMED (Irish Network of Medical Educators) 2018 Annual Scientific Meeting: *'Transition to Clinical Practice: Expectations of Experience'* **N Coakley**, P O'Leary, D Bennett.

2. Awarded Doctoral Student Travel Bursary 2019, College of Medicine and Health, University College Cork.
3. Podcast for Medical Education Journal with respect to published article *'Waiting in the wings'; Lived experience at the threshold of clinical practice* **N Coakley,** P O'Leary, D Bennett - Medical Education, 2019.

Appendix J

Copies of publications

‘Waiting in the wings’; Lived experience at the threshold of clinical practice

N Coakley, P O’Leary, D Bennett - Medical Education, 2019 ….Page 295

Experience-based learning; Supporting the transition from student to doctor

N Coakley, P O’Leary, D Bennett –Medical Education 2020……Page 307

'Waiting in the wings'; Lived experience at the threshold of clinical practice

Niamh Coakley,[1] Paula O'Leary[2] & Deirdre Bennett[3]

CONTEXT The transition to clinical practice is challenging. Lack of preparedness and issues with support, responsibility and complex workplace interactions contribute to the difficulties encountered. The first year of clinical practice is associated with negative consequences for new doctors' health and well-being. The contemporaneous lived experience of new graduates on the threshold of clinical practice has not been described. Deeper understanding of this phase may inform interventions to ease the transition from student to doctor.

METHODS We used interpretative phenomenological analysis (IPA) to explore the individual experience of making the transition from medical student to doctor, focusing on the period prior to commencing clinical practice. Fourteen recent graduates were purposively recruited, and semi-structured interviews were conducted with each, with respect to how they anticipated the transition.

RESULTS We draw on the metaphor of the actor 'waiting in the wings' to describe participants' lived experience on the threshold of practice. The experience of the actor, about to step into the spotlight, was mirrored in participants' perceptions of an abrupt transformation to come, mixed feelings about what lay ahead, and the various strategies that they had planned to help them to perform their new role convincingly.

DISCUSSION Participants in this study braced themselves for a trial by ordeal as they contemplated commencing clinical practice. The hidden curriculum shaped their understanding of what was expected of them as new doctors, and inspired dysfunctional strategies to meet expectations. Solutions to make the experience a more positive one lie in the approximation of the roles of senior medical student and newly qualified doctor, in explicitly addressing the hidden curriculum and generating cultural change. An emphasis on experience-based learning through contribution to patient care, guided reflection on the hidden curriculum and shifting cultural expectations through faculty development and strong local leadership can contribute to these objectives.

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INTRODUCTION

Transitions in medical education have been defined as 'dynamic movement across different expectations, tasks and responsibilities'.[1,2] Medical graduates find the transition from medical student to practising doctor a formidable one.[3–7] Indeed, the first year of clinical practice has a negative impact on the mental health and well-being of doctors, with high rates of depression, anxiety, stress and burnout.[8–12] Long working hours, high work intensity, issues with support and difficult workplace interactions contribute to the challenges faced. Even before commencing work, graduates can feel intimidated by anticipation of the responsibility to be assumed, uncertain about what is expected of them and unprepared for certain aspects of practice.[3,5,6,13–16]

Expectations prior to transitions are important. A newcomer to an organisation may experience 'reality shock', because of a disparity between anticipation and actual experience. Expectations of the job, or of their performance or emotional reactions to it, may diverge from the reality encountered.[17] In the case of medical students, competencies they considered unimportant in medical school can assume great significance on commencing work.[18–20] Lack of preparedness can cause anxiety and a fear of negative consequences for those in their first year of clinical practice.[21] Graduates have high expectations of the standard at which they should perform. Failure to meet these standards can be distressing.[5,6,22] They may also lack awareness of the pervasive nature of professional stressors in medicine, wrongly blaming themselves for perceived inadequacy on commencing practice.[20] Furthermore, uncertainty regarding others' expectations of them in the workplace can result in a reluctance to seek help, because of a fear of negative scrutiny.[15]

Much of our understanding about how the transition is experienced is based on opinions and attitudes of residents looking back at the transition to clinical practice. Less emphasis in the literature has been placed on exploring the experience of medical students and recent graduates as they contemplate the transition.[4,17,23–25] Studies that have focused on competence and preparedness have provided us with some appreciation of the student perspective.[5,26–28] Additional insights have been garnered from research into interventions aimed at easing the transition. These studies have revealed some concerns regarding lack of preparedness, and issues relating to responsibility, support and workplace relationships.[29,30] A more comprehensive exploration of the experience of graduates as they anticipate commencing work would deepen our understanding of this very important time in the professional development of doctors and could help medical educators to provide targeted support to ease the transition.

The aim of this study was to address this gap by providing an in-depth analysis of the lived experience of medical graduates as they anticipate the transition to clinical practice. This study is part of a larger project that is a longitudinal exploration of the experience of transition to clinical practice, from prior to practice to the first year of being a doctor.

METHODOLOGY

This study was conducted within an interpretative paradigm, using interpretative phenomenological analysis (IPA) as a methodological approach. The three major theoretical underpinnings of IPA are phenomenology, hermeneutics and idiography.[31] Phenomenology is a philosophical tradition concerned with the study of experience, as perceived by the individual. IPA is inspired by modern phenomenological philosophers such as Husserl, Heiddeger, Merleau Ponty and Sartre. Modern phenomenology was initiated by Edmund Husserl at the beginning of the 20th century. He advocated transcending preconceptions to identify the essence of a phenomenon, focusing on perception and consciousness. Heidegger and others, however, argued that the individual should be viewed as 'embodied, embedded and immersed in a particular historical social and cultural context'. Because of this connectedness with the world, these phenomenologists, in the existential tradition, were more interested in describing and interpreting how individuals make meaning for themselves in the world they find themselves in.[31–34]

Access to participants' 'meaning making' is dependent on the account provided by them, which researchers attempt to understand. This leads us to hermeneutics. IPA encompasses an interpretative undertaking, in that, as researchers, we interpret the account of how participants have, in turn, interpreted their experience (the 'double hermeneutic'). IPA aims to understand what an experience is like from the point of view of

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participants, but also asks critical questions about the way participants have interpreted their experiences.[33] This may result in meaningful insights and a perspective beyond that offered by the participant.[51–54]

The third theoretical underpinning of IPA is its idiography, a focus on the detailed exploration of the particular. The perspective of each individual is explored in full prior to moving onto the next case. Similarities and differences between cases can be appreciated after detailed exploration of the idiographic.[51]

IPA is particularly concerned with experiences of significance to the individual, experiences that generate much cerebral and emotional activity, as individuals attempt to make sense of them.[36] As the focus of this study is an exploration of the experience of transition to clinical practice from the perspective of medical graduates, IPA is an appropriate approach to use.

Context

This study was carried out in Ireland, in the Southern Intern Training Network, one of six networks nationally with responsibility for the first year of postgraduate medical training. Each network is linked to a medical school. Undergraduate medical education in Ireland is between 4 and 6 years in duration. Students can enter directly from second-level education (high school) or may have a prior degree. Internship is a year-long period of transition from medical student to fully registered medical practitioner. It is analogous to the first year of the Foundation Programme (FY1) in the UK and to Postgraduate Year 1 in Australia (PGY1). In countries where there is no provisional registration phase, an intern is equivalent to a first-year resident. As interns, doctors rotate through clinical posts, including a minimum of 3 months each in general medicine and in general surgery. They work under supervision, and on successful completion of the year can apply for specialist postgraduate training. Participants in this study would expect to work in various affiliated hospitals and community settings in the Southern region.

Ethical approval for this study was granted by the Clinical Research Ethics Committee of the Cork Teaching Hospitals, Ireland. NC, POL and DB are medical doctors with roles in the undergraduate medical programme linked to the Southern Intern Training Network. POL also has a role in the Intern Training Network. NC, who had no oversight of participants as interns, undertook all recruitment and interviews. These were anonymised prior to analysis by the rest of the research team. Pseudonyms were used in the reporting of results. The potential need for intervention or support regarding the well-being of participants was considered by the research team during data collection; however, no such intervention was required.

Recruitment

Thirty-five recent graduates who were due to start their first year of clinical practice were contacted via e-mail regarding the project. Recruitment was purposive, to ensure a gender-balanced group and diversity of undergraduate medical programme experience. Written information regarding the study was provided and participants gave informed consent prior to engaging in the semi-structured interviews. Participants were assured that participation was absolutely voluntary and that they were free to withdraw at any stage.

Data collection

A pilot focus group was conducted with a group of outgoing interns to inform the semi-structured interview schedule, which was underpinned by principles of IPA (see Appendix 1). NC conducted individual semi-structured interviews with each participant, which were held in the 2 weeks prior to the commencement of clinical practice. All interviews were audiorecorded, transcribed verbatim and anonymised.

Data analysis

NC and DB conducted the initial data analysis. Each transcript was analysed fully using IPA, prior to moving on to the next one.[51,52] Analysis commenced with immersion and familiarisation with the data through both listening and reading and re-reading of the interview transcripts. In a first round of coding, chunks of data were assigned summary descriptors, which were meaningful in respect of the focus of the research. Following this, experiential themes, recurrent experiential assertions, were identified, each illustrated with verbatim extracts of text. Nvivo software was used as a data management tool.[37] NC, DB and POL met regularly throughout the analysis to discuss identified themes, which were grouped into clusters

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of themes addressing related issues, known as superordinate themes. Once all transcripts were analysed, integration of themes across the entire dataset was undertaken. Both commonality and divergence were noted. An audit trail with clear documentation of each stage of the process was maintained for the duration of the study.

Reflexivity

The methodological approach employed necessitates an acknowledgement of the role of the researcher in the co-construction of knowledge with the participants. As such, we recognise the potential influence of the interviewer on the contribution of the interviewee, and the influence of our own prior experiences, assumptions and preconceptions in shaping the outcomes of the study. As faculty members from the same medical school as most of the participants, we were conscious of our position and engaged in 'critical self-awareness' throughout, avoiding assumptions of shared understandings or perspectives with participants, and prioritising the participant's voice.[38,39] We supported each other's reflexivity and maintained reflexive diaries throughout the process.

RESULTS

Fourteen participants were recruited. All participants, six male and eight female, were graduates of Irish medical schools. Four held prior degrees and had studied medicine on a medical course specifically tailored for graduates; the remainder had commenced their medical degrees directly from high school. Twelve of the participants had attended the local university aligned with the Southern Intern Training Network. Interviews ranged between 32 minutes 2 seconds and 70 minutes 48 seconds duration.

We draw on the metaphor of the actor 'waiting in the wings' as an effective means to capture the totality of the experience of the medical graduate on the threshold of commencing practice. Metaphor is commonly used in reporting qualitative research.[40] In this case, the metaphor was chosen as we discussed superordinate themes reflected in participants' accounts. The experience of the actor, about to step into the spotlight, is mirrored in the superordinate themes identified as participants made sense of this critical period; themes of abrupt transformation, mixed feelings and strategic planning. There were no significant themes in the data that diverged from this metaphor. Figure 1 shows the superordinate themes identified and their sub-themes.

Abrupt transformation

This theme included sub-themes of 'overnight change' and 'feeling like an imposter'.

Overnight change

Like an actor stepping onto a stage, most participants anticipated an abrupt transformation, from a position of invisibility and marginalisation as a student, to greater integration, participation, status and visibility.

> I can't wait to actually have a purpose, and a team as well, because as a student most of the time you are just following teams around, most of the time they don't want you there, you're being ignored a lot of the time. (Deirdre)

> It's going to be a big change, it's going to be a shock to the system, … it's not like medical school … you have a job to do and it's up to you to do it, just a bit of responsibility that we haven't had before I guess. (Eugene)

Feeling like an imposter

Just as the actor wishes to convey their character with authenticity, participants worried about how they would inhabit their role, some feeling that they would not actually feel like a doctor at all in the early transition.

> It's very strange to think of myself as a doctor, … I'll probably feel like an imposter for a little while. (Brian)

Mixed feelings

Waiting in the wings, the actor experiences mixed emotions. After long hours of rehearsals, they eagerly anticipate their moment to perform; however, they are also apprehensive. This theme included subthemes of 'positive anticipation' and 'anxiety'.

Positive anticipation

Most participants expressed excitement at the prospect of commencing work. They were relieved to have completed the arduous undergraduate

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Figure 1 Superordinate themes and their sub-themes

phase and were looking forward to moving on to the next stage of their professional development.

> I'm really excited because I have been looking forward to this for so long. (Irene)

> My main thing would be the excitement, to be finally, . . . it was a long slog . . . so it's good to be moving onto the next phase. (Mark)

Anxiety

Mixed with these positive thoughts, and in some cases dominating them, was anxiety regarding the uncertainty and unpredictability of what lay ahead. In particular, assuming responsibility, and their anticipated feelings of fear and stress, as well as the isolation of nights on call, were sources of concern.

> So I am definitely anxious going into it anyway, there's a kind of a big element of not really knowing what to expect, or how well you are going to perform. (Lucy)

> Definitely heading into my first medical call I will be quite anxious. It just feels like a lot of responsibility. (Gerard)

Most participants worried about their own performance, of not measuring up or that their mistakes might harm patients.

> Obviously . . . that I would hurt someone, or I would cause . . . some damage, or that I would do something really stupid or . . . something . . . that would be obvious to everyone else, but I just make a silly mistake. (Andrew)

Gerard considered his performance in the complexity of the busy clinical environment.

> Even if I had all the clinical knowledge in the world I would probably still be under stress from the sheer volume and also the pace at which I would be required to do it. (Gerard)

Many also expressed concerns about the physical and emotional demands of their new jobs, with Andrew raising the potential of burnout.

> I presume we are going to be so tired, you know, so tired all the time. (Karen)

> I would just be worried about feeling or becoming jaded. (Andrew)

Actors expose themselves to the scrutiny of others. Participants, likewise, considered the scrutiny that awaited them. They wished to prove themselves worthy colleagues. A fear shared by most participants, was that their inexperience might compromise the efficiency of the team, resulting in negative evaluation. This awareness of scrutiny by seniors contributed to ambiguous feelings regarding seeking support. Although acknowledging they would need support, they expressed a reluctance to ask for it because of their desire to be judged as competent and in control.

> I would feel that you don't want them to know that you feel a bit inadequate or something, . . . you don't want to burden your team or kind of make it look like you are not able for the job. (Jane)

In addition, some participants also expressed their anticipation and apprehension regarding potential conflict in the workplace.

> You'd be a bit worried about how you'd get on with certain consultants like, you know I suppose

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it's like anything, certain people have a reputation that precedes them. (Andrew)

Strategic planning

Actors about to step on stage plan how to deliver the best possible performance. They are aware of other actors whose words and actions will influence their own performance. Likewise, participants planned for how they would act with and react to the other players in the workplace. Subthemes identified under this theme were 'sources of support', 'interpersonal skills' and 'conformity and compliance'.

Sources of support

Participants contemplated how they would access support, citing nursing colleagues, with their experience and close proximity on the wards, as potential first ports of call.

> They are the ones who are around the wards and we'll be leaning on them for whatever. If a patient is sick, I'm sure they'll be quicker to spot it than you are … Especially at the beginning when you are taking your baby steps into the working world. (Eugene)

They also hoped that the solidarity of their intern colleagues and the empathy of previous interns would provide additional support for them. The team structure was recognised as providing a defined 'chain of command'; however, all described the arbitrary nature of this support.

> I think that SHOs [Senior House Officer, postgraduate years 2 and 3], especially new SHOs, … they were just where we are, so they maybe understand, … and would hopefully be willing to answer your calls. I also think as well, I think the interns will support each other. (Claire)

> I think that will depend on the team … how willing they are to support you … I hope they are supportive … but I don't know is it always there, I think it is very much team dependent. (Deirdre)

Interpersonal skills

Participants expressed a desire to integrate well into their new workplace, recognising the benefit of good communication and interpersonal skills for a smoother transition experience.

> I want to get on with everyone you know, I think it will make everything smoother. Because if you are on call and you need to call someone you won't feel as awkward being like 'sorry I'm calling you in the middle of the night' … and I really want to get on with the nurses as well because of that fear the whole time. (Claire)

Many anticipated that, although their interactions with their nursing colleagues might not always be positive, it was important tactically to foster good relationships with them. They recognised the power of nurses as a group and expressed a desire not to get on their bad side, fearing negative consequences. Some felt it necessary to cultivate a self-effacing attitude in interactions with nurses.

> Erm, it's a bit daunting I'll be honest with you. I feel like there is nearly an obligation, … not the word, 'buttering them up' isn't the right phrase but I … feel like I would like the nurses on my side because … nurses are fantastic and I've great respect for them in every sense, but they can be quiet sharp and they can put you in your place. (Faye)

Conformity and compliance

Participants expressed a determination to comply with all the potential demands of their workplace.

> I'm not sure if I'll have time for lunch everyday honestly … I haven't really thought about it, but if there is a day that I don't get lunch, I don't know what I'll do, I think I'll bring a couple of snack bars in my bag or something, … Breaks weren't really a priority for me going into this. (Hannah)

Considering the prospect of negative interactions, participants did not anticipate challenging people who behaved in an unprofessional manner towards them, often citing their low position in the medical hierarchy. Instead, there was a suggestion that they should toughen up and accept it. Jane worried about her own emotional reaction to negative interactions, feeling that she ought to be able to withstand and tolerate it. Hannah expressed the divergent opinion that 'a stern word' may be of academic benefit and 'is not always a bad thing I suppose'.

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I'd like to say that I'd stand my ground but I very much feel that I'm going to be on the lowest rung of the ladder so I do feel there will be compromise on my part I'd say to deal with situations like that. (Gerard)

Yeah, I suppose that will probably be one of the things that worries me . . ., as I would be a bit sensitive . . . and it might upset me a bit, but I think I am just going to have to deal with it, that's part of just taking things on the chin and getting a bit of a hard skin about it, you know . . . just take a moment when needed and then move on and say, look maybe they're having a bad day. (Jane)

DISCUSSION

Principal findings

The metaphor of the actor waiting in the wings is used here to explore the phenomenon of the transition from medical student to doctor from the perspective of recent graduates about to commence practice. As actors await their cue, they contemplate their imminent performance, how they will perform the role, adapt to the new set, interact with other actors and with the audience. Participants in this study, likewise, deliberated over how they would inhabit the role of competent intern, perform in the complexity of the clinical setting, improvise in response to the behaviours of others, and impress a critical audience of peers, senior doctors and other health care professionals. We have provided an insight into their excitement, expectancy, doubts and uncertainty as they stand on the threshold of practice.

Transition shock

Participants' anticipation of the transition as an abrupt change in role and responsibilities, and the apprehension they expressed at the thought of being suddenly thrust into the limelight in this way, echo the phenomenon of 'transition shock' described in newly graduated nurses.[41,42] 'Transition shock' is an intense period of adjustment, characterised by feelings of inadequacy, anxiety, stress and powerlessness, resulting in physical and emotional exhaustion. An important contributory factor to this experience is a disparity between expectations of the contributions undergraduate students and recent graduates should make to the workplace.[42]

Theories of workplace learning espouse gradual and progressive participation in practice[43] and tell us that medical students become capable and trustworthy doctors by making meaningful contributions to patient care.[44] Participants in this study had rehearsed the role of doctor, gone through the motions in simulated and authentic settings, and yet it is clear that they anticipated that the performance of the role would be qualitatively different to the rehearsal. For them, status and responsibility appeared to be the key differentiating aspects of being a doctor. Traditionally, in Ireland and the UK, undergraduate medical education has not provided students with many opportunities for the supported assumption of clinical responsibility.[5] More recently, interventions such as sub-internships and assistantships, where a senior medical student assists 'a junior doctor and, under supervision, undertakes most of the duties of an F1 doctor', have been employed in an effort to bridge this training–practice gap and ease the abrupt nature of the transition.[45,46] It appears that these interventions can improve students' self-assessed preparedness to undertake the tasks of a doctor.[47,48] It is less clear whether they offer an opportunity to feel the status and responsibility of being a doctor. Despite experiencing these types of interventions, participants in this study anticipated the transition as an overnight transformation.

The hidden curriculum

Medical culture exerts a significant socialising influence on medical students.[49] The hidden curriculum has been defined as a 'set of influences that function at the level of organisational structure and culture including . . ., implicit rules to survive the institution, such as customs, rituals and taken for granted aspects'.[50] This study revealed the impact of the hidden curriculum on the meaning that participants made of working in clinical environments, the transition to practice and their plans in response to its challenges. On the negative side, what they had seen and heard as medical students led them to express apprehension about support, scrutiny, the likelihood of difficult relationships with staff and challenges to their health and well-being. They appeared to be bracing themselves for an experience to be endured rather than enjoyed. Participants' planned behaviour for coping with these challenges was often dysfunctional and driven by unspoken cultural expectations. These included not taking breaks or eating properly, not necessarily seeking help when

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it was needed, and accepting being the target of rude, aggressive and dismissive behaviour.

Haidet and Stein described some of the cultural premises implicit in the hidden curriculum: doctors must be perfect, uncertainty and complexity are to be avoided, outcomes are more important than processes (e.g. certain behaviours can be excused if the desired outcome is positive), medicine takes priority, and hierarchy is necessary.[51] Discourses of competence dominate those of caring in medical education, and vulnerability is often equated with incompetence. These messages compel students to prove their suitability for the profession by presenting themselves as confident, competent and capable, and to hide self-doubt or vulnerability.[52–54] This can manifest as high personal expectations, and concerns about competence and adequacy, which exacerbate the stress of the transition, consistent with the feelings expressed by participants in this study.[15,55,56] It also results in a reluctance to approach senior doctors for support,[57] with potential risks to patient safety as a result.

The hidden curriculum contributes to a stigma towards doctors with mental health problems. Resonating with our participants' experience, previous studies have revealed a reluctance among trainees to admit to feeling overwhelmed, or to access support services, for fear of professional repercussions.[58,59] Participants were determined to comply with all the potential demands of the job, including long hours and high work intensity. Even prior to commencing work, participants appeared to prioritise the implicit message of 'unwavering duty' and to 'soldier on' above self-care and compassion.[57,60]

Participants, anticipating conflict in their new workplace, had already resolved to endure and accept it. Bullying, intimidation and harassment often starts in medical school.[50,61,62] Teaching by humiliation is one of the main ways that students learn about the importance of the medical hierarchy.[50] The hidden curriculum cultivates a tolerance of bad behaviour in the clinical setting.[63] Although provoking feelings of despair and hopelessness among students, a common response is to remain impassive and expressionless.[64] They may excuse the unprofessional behaviour of senior doctors, instead implicating external factors such as workload or fatigue, or they may blame themselves for it.[50] These attitudes are reflected in the preemptive rationalisation of bad behaviour observed in this study. Bullying, intimidation and harassment are endemic in postgraduate training and appear to be accepted as part of the workplace culture. These behaviours continue to be under-reported, with trainees fearing personal and professional consequences.[58,65,66] There is a danger that this behaviour may, in turn, be imitated by trainees, through their unconscious acquisition of the bad behaviour of their role models.[67]

Support

More positively, participants did anticipate some supportive elements in the workplace. They identified their peers or their nursing colleagues as initial ports of call for assistance. They anticipated that their nursing colleagues would be available on the wards for uncritical advice and orientation, a perception borne out in the workplace.[68] Their identification of the team structure for support and reassurance is consistent with evidence of its positive impact on well-being and sense of preparedness in the first year of practice.[14,23,69] Participants intended to strategically foster good relationships with their colleagues to smooth their integration into the workplace. The intention to engineer a good relationship with their nursing colleagues for fear of the consequences of annoying or provoking them, suggests that participants understood that interprofessional working relationships might be problematic.

Implications for practice

Our findings have highlighted areas where there is scope to improve the experience of transitioning to practice. Firstly, they reinforce the need to strengthen experience-based learning,[44] so that the role of senior medical student approximates the role of newly qualified doctor, particularly in terms of status and responsibility. Medical students need to assume clinical responsibility incrementally over time so that the transition to practice becomes just another step in a series of small steps, and any risk of transition shock is diminished. This approach would also allow students to develop and maintain more realistic expectations of themselves that are grounded in clinical experience. Greater integration within the clinical team structure, and for longer periods,[46] should facilitate both the development of status, and entrustment with responsibility for patient care. A workplace learning pedagogy for undergraduate medicine, such as experience-based learning (ExBL), may present a solution.[44]

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Secondly, the negative influence of the hidden curriculum should be challenged explicitly in an effort to avoid new doctors adopting behaviours that compromise their own well-being, as well as patient safety. Guided reflection by medical students to promote identification and critical evaluation of the hidden curriculum and of professionalism can empower students to become active participants in their own professional identity formation[67,70–72] and to become agents of change in the workplace.[73]

Cultural change is needed to create environments where new doctors can expect to be treated respectfully, be given appropriate support and not to feel pressure to conform to the notion of the 'perfect doctor'. Such change requires a multifaceted approach and strong leadership to champion new approaches in daily practice. In addition to supporting newly qualified doctors to become agents for change as outlined above, faculty development should support more senior staff to model and communicate appropriate professional behaviour.[55,67,74–76] The supervisory approach, including clarity of communication, language used and creation of a safe and non-judgemental environment, has been shown to encourage postgraduate trainees to seek support appropriately.[77–79] Health care organisations must address issues within their own cultures to ensure that positive and supportive workplace relationships are fostered,[80] along with the well-being of residents and faculty members and the identification and remediation of problematic behaviour.[74,76]

Strengths and limitations

A strength of this study is that it captures in real time, the lived experience of anticipation of clinical practice from the perspective of the individual. This insight into the disposition and outlook of those facing the transition expands what we already know about the transition and can inform interventions at undergraduate and postgraduate levels. Nonetheless, there are limitations to our findings. Interviews were conducted by a member of the medical school faculty who was known to many participants. Although the interviewer is not involved in the intern programme, it is possible that these participants were not fully open in their accounts. Therefore, there may be dimensions of the experience that remained below the surface, yielding an incomplete understanding of the transition.

The majority of participants in this study attended the university aligned with the intern training network where they were about to commence work, which may be seen as a limitation in terms of wider applicability. It is our intention that conclusions drawn in the context of this study allow the reader to evaluate transferability to other similar settings.

CONCLUSIONS

Waiting in the wings, on the threshold of clinical practice, participants in this study were bracing themselves for a trial by ordeal. The hidden curriculum shaped their understanding of what was expected of them as new doctors, and inspired dysfunctional strategies to meet expectations. Solutions to make the experience a more positive one lie in the approximation of the roles of senior medical student and newly qualified doctor, in explicitly addressing the hidden curriculum and generating cultural change. An emphasis on experience-based learning through contribution to patient care, guided reflection on the hidden curriculum and shifting cultural expectations through faculty development and strong local leadership can contribute to these objectives.

Contributors: DB conceived this study. NC was responsible for recruitment and conducted all interviews with participants. DB, NC and POL contributed to analysis and interpretation of the data. NC wrote the first draft of the manuscript and edited it in response to feedback from the other authors. DB and POL contributed to reviewing and revising the manuscript. All authors approved the final manuscript for submission and have agreed to be accountable for its content.

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Appendix 1: Interview schedule: transition to clinical practice

To be conducted prior to commencing clinical practice.

Experience of expectation of transition.

- What are your thoughts now about starting work as an intern in the coming weeks?
- What do you think it will be like during the first couple of months working as an intern?
- How do you expect you will be spending the working day?
- How confident do you expect to feel in your work?
- Do you have any concerns at the moment about your readiness to work as an intern?
- What kind of working relationships do you expect you will have with other doctors and allied health care professionals?
- What are your expectations in relation to working hours?
- What level of support do you anticipate having – during daytime and on call?
- What are the biggest challenges you expect to encounter?
- As a medical student what opportunities have you had to participate in patient care?
- How well do you feel the undergraduate curriculum has prepared you for internship?

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Experience-based learning: Supporting the transition from student to doctor

Editor,

We welcome the comments of Davidson and Davidson in relation to our article: 'Waiting in the wings': Lived experience at the threshold of clinical practice (2019).[1,2] We agree that shadowing and assistantships can reduce anxiety and enhance preparedness for the transition from student to doctor, particularly shadowing the post that one is about to commence as a first-year doctor.[3] Amongst participants in our study, however, the transition was experienced as an abrupt one despite interventions such as these, and we believe that wider ranging change will be needed to address the problem.

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We proposed that greater emphasis on experience-based learning (ExBL), as a broad approach to clinical education, would allow medical students to assume clinical responsibility incrementally over time, thus approximating the role of senior medical student and newly qualified doctor.[1] The recently published Association for Medical Education in Europe guide on ExBL describes it as a '21st century pedagogy of practice-based learning derived from the best current theory and evidence.'[4] Experience-based learning espouses supported participation in clinical practice to develop student capability and facilitate professional identity formation, with the co-participation of clinicians and patients. The provision of organisational and clinician-led support is a cornerstone of ExBL, enabling students to participate in practice, observing, rehearsing and contributing to patient care, based on their individual capabilities. This model of workplace learning, with cognitive, affective and practical support, can be applied throughout undergraduate clinical experience, including early patient contact, thus mitigating the apprehension of junior medical students transitioning to senior clinical clerkships, referred to by Davidson and Davidson.[2] The wealth of evidence underpinning ExBL shows that facilitating students to experience responsibility for real patients in a supportive clinical context leads to affective capabilities. These include positive feelings (eg happiness, inspiration, greater motivation and confidence, empathy and compassion) as well as recognising and responding appropriately to ambiguous or negative feelings such as stress or anxiety. Through ExBL, medical students become capable doctors and the abrupt nature of the assumption of responsibility seen in our study is reduced.

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