Positive risk-taking in intermediate care: a study of risk-related decision making in occupational therapy

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Abstract

Intermediate care services support people at the interface between hospital and home and its services are mostly accessed by older adults with complex needs. There are many risks associated with discharging older adults from hospital to home. Employing positive risk-taking in occupational therapy intermediate care interventions is necessary to ensure safety and autonomy. In this context, it is likely that positive risk-taking barriers can impact discharge decisions, especially those made by students of occupational therapy or newly qualified practitioners who have been shown to be more risk averse than experienced practitioners.

This research investigated the effect strength of positive risk-taking barriers at different levels of occupational therapy experience in relation to discharging older adults from hospital to home in occupational therapy intermediate care and other occupational therapy community services. To achieve this, a scoping review, a consensus study by Nominal Group Technique (NGT) and a factorial survey were undertaken.

A scoping review of twenty-five articles (n=25) investigated the common areas of risk and their characteristics from an occupational therapy intermediate care perspective. It found ten risk domains: falls, discharge, practice errors, activities of daily living, pressure care, frailty management, patient handling, loneliness, nutritional care and language barriers. Three risk characteristics were identified, these were, ‘risk awareness and

identifying risk', 'decision-making under risk' and 'improving safety'. Additionally, it was found that risk control, reconciliation with occupation, and facilitation of positive risk-taking were implicit and not directly addressed within the literature.

The Nominal Group Technique (NGT) convened experienced intermediate care occupational therapists to determine the most prevalent risks and barriers to positive risk-taking. Nineteen (n=19) areas of risk and sixteen (n=16) positive risk-taking barriers were identified. 'Falls' and 'Comorbidities' were rated the most common areas of risk. 'Different risk perception for organisations/providers' was rated the highest positive risk-taking barrier. Based on the findings from the scoping review and the NGT, vignettes were constructed to approximate occupational therapy intermediate care discharge to home scenarios and the prevalent responses were organised into positive risk-taking barriers and facilitators.

The factorial survey was employed to investigate the barriers to positive risk-taking at different levels of experience. Seventy-four (n=74) participants self-categorised their older adult occupational therapy experience into Novice, Semi-expert, Expert before answering a total of 281 vignettes. Those barriers that were found to be statistically significant in reducing the likelihood to recommend a home discharge for an older adult were 'No Support', Novices ($\beta = -.315$, $p=0.002$), Semi-experts ($\beta = -.313$, $p=0.001$) Experts ($\beta = -.254$, $p=0.009$); 'Limited Capacity', Novices ($\beta = -.305$, $p<0.003$), Semi-experts ($\beta = -.254$, $p=0.006$) Experts ($\beta = -.376$, $p=0.001$) and 'Blame Culture' Semi-experts ($\beta = -.240$, $p=0.010$). Novices were found to be less likely to recommend a home discharge by comparison, Semi-experts were the group most affected by the 'Blame

Culture' factor and Experts considered the 'Limited Capacity' factor as the most relevant in this context. These findings are important to direct future research and could be used as a targeted approach to training occupational therapists at pre-registration level, inform intermediate care practice and benefit occupational therapists who are new to discharge risk assessment and positive risk-taking.

Publications arising from this study

The following paper from this programme of research has been published:

Newman, C., Whitehead, P. & Thomson, M. 2022. What are the common areas of risk and their characteristics found in intermediate care from an occupational therapy perspective? A scoping review. British Journal of Occupational Therapy, 03080226221079233.

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Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas, and contributions from the work of others. Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted through the Researcher's submission to Northumbria University's Ethics Online System, references 22992 (6.4.20) and 28964 (8.4.21) refer.

I declare that the word count of this thesis is 80428 words.

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Statement from the funder

This thesis relates to an independent research programme supported by Northumbria University (Doctoral Studentship, 16002417/2). The views expressed in this thesis are those of the author and not necessarily those of Northumbria University.

Project concept

The project concept was conceived as a doctoral studentship and as an interdisciplinary project across the faculties of Health and Life Sciences and Business and Law. The advertised project aim was: -

The aim of this project was to identify common areas of risk encountered by therapists in intermediate care and determine how experienced therapists make decisions about these risks; to develop recommendations to support training about positive risk-taking decisions by novice and student therapists.

Research phases:

This research programme took a pragmatic approach with each study informing the next. The lack of literature bringing occupational therapy intermediate care and risk together highlighted the need for a scoping review. The findings supported there were specific gaps in knowledge about how risk was managed and how positive risk-taking was employed and the barriers to employing such imperatives. In this context expert occupational therapists were needed to provide a clinical perspective and this information was used to construct real to life vignettes which could be employed in a factorial survey to confirm which positive risk-taking barriers had the most effect strength on Novice, Semi-experts and Experts. The research phases were:

- Phase 1. A scoping review of the literature was conducted in order to identify areas of common risk and their characteristics from an occupational therapy intermediate care perspective

- Phase 2. An expert panel of intermediate care occupational therapists was convened, and a Nominal Group Technique (NGT) was employed in order to seek consensus on the common areas of risk and positive risk-taking barriers. The scoping review and NGT findings were used to construct vignettes to approximate the risks in occupational therapy intermediate care

- Phase 3. With the use of these vignettes, a factorial survey was employed to investigate the effect strength of the positive risk-taking barriers on Novices, Semi-Experts and Experts decisions whether to recommend a home discharge

Craig Newman's Role in the Research

The study was conceived by Professor Mary Thomson and Dr Phillip Whitehead and offered as a doctoral research project (RDF19/HLS/SWECW/WHITEHEAD). Craig's research proposal developed the structure of the project in collaboration with the supervision team to include the three phases. Craig undertook the role of the principal investigator throughout the duration of the study, which included all research ethics applications. Specifically, Craig:

- Acted as the first reviewer for the scoping review, carried out the searches and extracted the data. He undertook the content analysis and write up as a first author
- Conceived the NGT study design, organised recruitment, conducted the research as the primary facilitator and carried out all analysis
- Conceived and designed the factorial survey including selecting the regression model
- Recruited the participants for the factorial survey
- Analysed the factorial data, including, all statistical assumption testing

Due to Craig's role in the above activities, assistance was necessary with some aspects of these studies to maintain rigour. The following components were completed by the supervision team:

- A second reviewer of the search hits, charting data, screening the descriptive codes used in the thematic analysis of the scoping review and screening for quality assessment. Second and third authors to provide support and input for the scoping review (Phase 1) manuscript
- A second facilitator to help conduct the NGT. Second and third authors to provide support and input for the NGT and vignette construction (Phase 2) manuscript
- Second and third authors to provide support and input for the factorial survey (Phase 3) manuscript

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Chapter One - Intermediate Care, Occupational Therapy and Risk

1.1 Introduction and background

Intermediate care is an internationally recognised healthcare concept which can encompass many different service models. It can be simply described as healthcare occurring between traditional primary (community) and secondary (hospital) care settings (Woodford & George, 2010). There is no universal definition or representative example of how it works (Grant et al., 2007; Roe & Beech, 2005). Despite this ambiguity, there is general agreement that intermediate care is a short-term intervention that is rehabilitative in nature to maintain or restore independence and is mostly accessed by older people. Its delivery quite often involves locally based care services that can deploy care closer to a client's home and these services are drawn from both health and social care providers (Roe & Beech, 2005).

Since the 1990s, intermediate care has evolved to meet the needs of a changing society bringing new demands and challenges. It is, in part, developed by occupational therapists and occupational therapists play a crucial role within an intermediate care multidisciplinary team (Grant et al., 2007). Intermediate care has developed a broad remit incorporating integrated service models which include occupational therapy as a mandatory and core healthcare profession (NICE, 2017).

Occupational therapy is a complex intervention (Pentland et al., 2018) and intermediate care is a risk prone area of practice involving during provision and post provision risk management. Making decisions under risk is a problematic area of practice. Older adults'

level of function is dynamic and changeable with bouts of ill health becoming more frequent as age increases (McIntyre & Atwal, 2005). Occupational therapy can be difficult to reconcile with recovery and rehabilitation in transitional states of health and function. In such circumstances it is challenging to identify and predict risk, mitigate it to a safe level so that a client can perform the activities they need or want to do safely.

Risk management is a prerequisite for achieving positive outcomes for those accessing intermediate care. Occupational therapists are required to assess risk to facilitate positive risk-taking (RCOT, 2017). Positive risk-taking involves identifying risk and developing plans and actions that reflect the positive potentials and this involves weighing up the benefits and harms of exercising one choice of action over another (Morgan, 2004). The primary goal is to support a person's wellbeing, choice, independence, and quality of life (NICE, 2017). Despite risk policies and guidance endorsing the benefits of using risk therapeutically there is a lack of knowledge and evidence about how positive risk-taking is applied in intermediate care and older adult occupational therapy (Newman et al., 2022).

Expertise is known to influence how risk is perceived and empirically expert risk judgments and decisions have been found to be more veridical with true outcomes (Breakwell, 2007; Thomson et al., 2004). In this context, there is a paucity of literature which elucidates how expert occupational therapists make decisions under risk and what decisional factors might have the strongest effect, especially where risk must be managed frequently in older adult occupational therapy. Moreover, there is a lack of empirical study of positive risk-taking in the context of occupational therapy practice, its potential

barriers and how this might be affected by different levels of experience. This gap in knowledge has implications for older adult occupational therapy, intermediate care provision, future research and occupational therapy education. These imperatives present an opportunity for further research.

The programme of research presented in this thesis has been developed to investigate positive risk-taking in occupational therapy intermediate care. It focuses on intermediate care risks and positive risk-taking barriers in the context of older adults transitioning from hospital to home. It is relevant to intermediate care occupational therapy services and the broader aspects of occupational therapy in community-based settings which support such transitions for older adults.

This chapter focuses on a broad review of the literature pertaining to intermediate care, occupational therapy, and risk. Using positive risk-taking in occupational therapy interventions is not mutually exclusive of sociocultural and organisational factors. It is, therefore, important to introduce intermediate care in relation to its driving forces, the challenges in defining it, its amalgamation with the reablement service model and its importance to health and social care. Additionally, occupational therapy's core concepts and the complexity of older adult care and occupational therapy's function within intermediate care are introduced to highlight this risk prone area of practice in relation to positive risk-taking with older adults.

Later in this chapter, the concept of risk is explored in relation to occupational therapy, risk perception and assessment, positive risk-taking, rights and responsibilities of risk taking, professional reasoning including differences between experience levels in making decisions under risk. Finally, this chapter will provide the rationale for conducting a scoping review of the literature as presented in Chapter 2 as an important foundation and initial stage to direct this research programme.

1.2 The emergence of intermediate care

Intermediate care was introduced during a time where there were serious patient safety and quality of care concerns, a lack of national standards, demarcations between staff and services, over centralisation and disempowered patients (NHS, 2000). In this part of the chapter intermediate care will be discussed in relation to the then health and social care reformations and the key policies which influenced its founding principles, notably, counteracting unnecessary admission and or readmission and to provide support to ensure a timely discharge from hospital to home or an appropriate care setting. This placed emphasis on safe transitions from hospital to home and effective short rehabilitation. In this context, managing risk for those receiving intermediate care was fundamental to achieving its aims.

The term ‘intermediate care’ was first introduced into policy by the Department of Health (DOH) in their National Health Service (NHS) plan, ‘A plan for investment, a plan for

change', which brought in a programme of reform to strengthen the partnership between the NHS and social care to: -

> '…provide high quality pre-admission and rehabilitation care to older people to help them live as independently as possible by reducing preventable hospitalisation and ensuring year-on-year reductions in delays in moving people over 75 on from hospital..." (NHS, 2000 p.131-132).'

The commitment to increase investment and to offer a comprehensive range of services to support individuals in relation to health promotion, disease prevention, self-care, rehabilitation and after care were central to the ideals of modernisation (NHS, 2000). The creation of five thousand intermediate care beds and the formation of rapid response teams were seen as fundamental to reduce unnecessary hospital admissions by 70000 per year by 2004 (NHS, 2000). In contrast, the proposed improvements to a self-professed failing NHS invited critics, who suggested such improvements were a policy imperative rather than the analysis of empirical evidence, to determine an appropriate model of care or any alternatives (NHS, 2000; René et al., 2004).

The National Service Framework (NSF) for Older People (2001) was the first comprehensive strategy requiring service providers to incorporate equitable high-quality care which integrated health and social care services for older people. Additionally, it was also the primary framework for implementing the new ideals of the NHS plan (DOH, 2001). This included an agenda to disseminate a programme of reform to address

problems of discrimination, low standards of care provision, organisational barriers inhibiting proper assessment, and access to the best evidence-based care for older people. The Department of Health's NSF for Older People (DOH, 2001), 'Standard 3' introduced intermediate care and provided: -

'Older people will have access to a new range of intermediate care services at home or in designated care settings, to promote their independence by providing enhanced services from the NHS and councils to prevent unnecessary hospital admission and effective rehabilitation services to enable early discharge from hospital and to prevent premature or unnecessary admission to long-term residential care' (DOH, 2001 p.41).

Policy documents including the Audit Commission (1997) 'The coming of age: improving care services for older people' and the National Beds Inquiry (NBI) provided evidence-based rationale to support the proposed reformations. The Audit Commission concluded that further investment was required in preventative and rehabilitative services and a lack of funding had contributed to unplanned admissions of older people to hospital and, in turn, premature admission to long term residential care (Audit Commission, 1997). The NBI report found that significant numbers of older people remained in acute hospitals longer than was necessary or desirable (DOH, 2000). McDonagh et al. (2000) conducted a systematic review commissioned by the NBI entitled 'Measuring appropriate use of acute beds', which found that approximately 20% of beds being used by older people were probably inappropriate and would be unnecessary if alternative services were in place. The NBI also identified wide and geographical variations relating to these services in how acute care beds were managed for older people after adjusting for health

and social factors (DOH, 2000). Additionally, the report emphasised that too many older people were admitted to hospital because of a lack of community-based resources, and this potentially increased the risk of disorientation, contracting hospital-based infection and caused disruption to their social networks (DOH, 2000). Intermediate care provided community resources and a means to prevent many of these patient safety concerns, this also emphasised the need for effective risk management (post provision) to promote a patient's ongoing safety. However, the integration of many services into the remit of intermediate care was challenging due to multiple definitions, interpretations of its purpose and the absorption of established services providing a broader remit of care for older adults. This meant that those services were not equitable, bringing about different levels of care quality and patient safety.

In summary, intermediate care emerged to address many issues simultaneously including to increase bed capacity in hospitals, provide community based rehabilitative services whilst addressing more systemic issues relating to older adult care, those being low standards, discrimination and organisational barriers inhibiting proper assessment. There was an emphasis also for intermediate care services to concentrate on hospital transitions to avoid unnecessary admission and ensure a safe and timely discharge. Its remit addresses a high-risk area of care (hospital transition) for a client group (older adults) synonymous with needing effective risk management to ensure such transitions are safe. The challenges with defining it and the drivers which have led to its creation also have relevance to occupational therapy intermediate care risk management and will be discussed next.

1.2.1 Early definitions: confusion or clarity?

Defining intermediate care was important to establish and organise its structure and to demystify its remit. It was also important to establish the roles and responsibilities of its workforce. Role clarity is associated with improved care coordination and professional autonomy balanced with interdependence (Duner, 2013) while ambiguity about responsibilities can lead to conflict and tension (Anderson et al., 2014; Ly et al., 2018). Conflict and tension are not conducive with establishing a safety culture and working collaboratively to reduce risk. In this context, confusion in role may break down necessary lines of risk communication and act as a barrier to positive risk-taking with older adults accessing occupational therapy intermediate care. In this part of the chapter, the challenges to defining intermediate care is discussed in relation to its differing conceptualisations and definitions, service integration and key policies introducing its purpose.

By the end of the 1990's many services were focused on preventing or avoiding hospital admission and providing hospital after care in the community. This emerging paradigm provided services that were mobilised to meet the objectives of intermediate care. Steiner (1997, cited in Stevenson & Spencer, 2002) argued that intermediate care pertains to the functions of these services and should not be considered a discrete service. Philp (2000, cited in Stevenson & Spencer, 2002) emphasised that intermediate care was not the sole responsibility of one professional group, or a mechanism of funding to provide desirable resources for older people. Moreover, it was not an appropriate solution to provide an interim care option pending long term placement and or a service which would

marginalise older people from mainstream healthcare services. Similarly, Steiner (2000, cited in Stevenson & Spencer, 2002 p.7) sought to clarify the concept of intermediate care by offering a broad and narrow definition in a King's College conference presentation entitled, 'Care closer to home'. The broad definition was, 'a whole set of services designed to smooth transitions between hospital and home, treat chronically or terminally ill people without recourse to hospital care, and prevent long-term institutionalisation'. The narrow definition was 'that range of services designed to facilitate the transition from hospital to home, and from medical dependence to functional independence, where the objectives of care are not primarily medical, the patient's discharge destination is anticipated, and a clinical outcome of recovery (or restoration of health) is desired' (Steiner 2000, cited in Stevenson & Spencer, 2002 p.7). This last definition was later revised to include social as well as functional independence.

The heterogeneous nature of these services, and the variety of different names used to describe them, gave rise to some confusion between policy makers and practitioners (Stevenson & Spencer, 2002). As part of the National Service Framework Report for Older People guidance (DOH, 2001), it was mandated that intermediate care should:

- be targeted at people who would otherwise face unnecessarily prolonged hospital stays or avoidable admission to acute in-patient care, long-term residential care or continuing NHS inpatient care
- be provided on the basis of a comprehensive assessment, resulting in a structured individual care plan that involves active treatment and rehabilitation
- be designed to maximise independence and to enable patients/service users to remain or resume living at home

- involve short-term interventions, typically lasting no longer than 6 weeks and frequently as little as 1-2 weeks or less
- involve cross-professional working, within the framework of the single assessment process, a single professional record and shared protocols

(DOH, 2001 p.43)

Despite this guidance, services that potentially met these criteria overlapped within many shared community and continuing care services. Whilst it formed a strong foundation for building an intermediate care framework, the scale and complex infrastructure of services was also seen as a barrier to introducing a new paradigm of care (Stevenson & Spencer, 2002). Many of these services were established before any attempt to introduce them into the new intermediate care paradigm and often filled the gaps in the care continuum for older people.

These gaps in care included a need for rehabilitation lasting longer than 6 weeks and care for the terminally ill who wanted to remain at home. As such, these oversights led to many local care communities challenging the DOH criteria on the grounds it was too narrow and ill conceived (Stevenson & Spencer, 2002). Likewise, a national evaluation in the UK found that some schemes considered integral to older people care which had been previously classified as intermediate care did not fit into the DOH criteria (Stevenson & Spencer, 2002). Additionally, there was confusion around the relationship between ‘rehabilitation’ and intermediate care services, as the term ‘rehabilitation’ was being used to describe their functions and not the service in its own right (Roe & Beech, 2005;

Stevenson & Spencer, 2002). However, despite intermediate care becoming a widely used term, many see it as a subset of rehabilitation owing to its short-term transitional care and strong rehabilitation ethos (Stevenson & Spencer, 2002).

The key features of intermediate care can be linked to many studies and commentators that have focused on supporting acute care and providing alternative care options between the primary or secondary sectors. These features included, 1) intermediate care should be accessible, homebased, or close to home (Brooten et al., 1988; McCormack, 1993; Steiner, 1997); 2) should bridge primary and secondary care services (Angela, 1998; McCormack, 1993); 3) involve a move away from acute hospitalised care, offering low intensity options that emphasise therapy and social care in order to reduce or negate medical and or acute care dependence (Angela, 1998; McCormack, 1993; Pearson, 1992; Steiner, 1997); 4) focus on discharge where the discharge destination is identified and there is timely intervention to divert care away from acute care, either preventatively or post discharge (Brooten et al., 1988; McCormack, 1993; Pearson, 1992). Additionally, services should be supportive and rehabilitative in nature where recovery and restoration of health is realistic (Brooten et al., 1988; Pearson, 1992; Steiner, 1997).

Despite the identification of core features, unifying the intermediate care definition has been challenging and, at times, contentious. An example of this would be the debate as to whether it should be primarily patient focused or organisationally focused. Patient centred care is associated with rehabilitation, recovery, home independence, finding suitable alternatives to home. In contrast, organisational objectives focus on length of stay, lowering costs, optimising throughput or focus on more appropriate hospital

admission (Steiner, 2001). Many intermediate care definitions exclude an organisational viewpoint in favour of explaining its framework in relation to the client. Considering many of these factors, Steiner defined intermediate care as: -

> 'Intermediate care refers to services or activities concerned with patients' transitions between hospital and home, and from medical/social dependence to functional independence. It is intended either for post-acute patients requiring recuperative support, or for community dwellers (usually frail or chronically ill) who are at short term risk of avoidable hospital admission'
>
> (Steiner, 2001 p.34).

Steiner (2001) clarified that whilst the expectation of intermediate care is to provide short term care, it should not provide indefinite community care and or act as a 'holding tank' for older people with a poor prognosis. This included the notion that chronically ill patients could access intermediate care intermittently in line with their needs, thus, avoiding being compartmentalised in the dichotomy of a one off or continuous approach. Also, intermediate care provision should not be purely administrational or adopt high tech treatments and instead should focus on therapeutics to support and restore health. Additionally, Steiner (2001) emphasised the importance that the clients' setting should not restrict access to the intermediate care service. Moreover, the relevance of the services designed to divert or avoid hospital admissions should be recognised within health and social care.

Despite attempts to bring intermediate care into a definable model, The National Evaluation Team posit 'there will be no such thing as a typical or representative whole system of intermediate care' (The National Evaluation Team, nd, cited in Stevenson & Spencer, 2002 p.8). Wade (2004) acknowledged that intermediate care was not a completely new concept and some of it remains ill-defined and that future developments of intermediate care are open to greater opportunities to improve upon its previous interpretations and definition. Intermediate care is difficult to define and as a concept it can be interpreted to a broad range of services. The net effect could cause confusion and crossover of responsibilities. These services may have different ideologies to care which inform their roles and this can work against establishing effective partnerships to manage risk collaboratively to deliver intermediate care. Occupational therapy has helped develop intermediate care service provision (Grant et al., 2007). As part of an intermediate care team, occupational therapists assess a person's support needs, to improve their ability to live independently (NICE, 2017). The World Federation of Occupational Therapists (WFOT) define occupational therapy as:

'… a client-centred health profession concerned with promoting health and wellbeing through occupation. The primary goal of occupational therapy is to enable people to participate in the activities of everyday life. Occupational therapists achieve this outcome by working with people and communities to enhance their ability to engage in the occupations they want to, need to, or are expected to do, or by modifying the occupation or the environment to better support their occupational engagement.'

(WFOT, 2012 para.1)

In the context of intermediate care defying a cohesive definition. It is important for occupational therapists to articulate the purpose of occupational therapy and the reason for any intervention being undertaken, to promote an understanding of the profession (COT, 2015 p.35). However, this must be reciprocated between partner services and their practitioners so risk management and positive risk-taking strategies can be mutually discussed, agreed, and understood.

1.2.2 The drivers of intermediate care

Risk has many potential ways it can affect occupational therapy intervention as it can be introduced because of social, cultural, and political conditions. In the context of the types of extrinsic factors relevant to making risk related decisions in occupational therapy intermediate care, it is important to understand the challenges and conditions in society which have converged to create the demands on practice. Such influencers are relevant to intermediate care at an organisational level and speak to the wider issues of patient safety and risk management within intermediate care services.

Intermediate care is discussed in this part of the chapter in relation to the increasing older adult population, the introduction of the NHS ‘internal market’, a reduction in acute care services, reduced hospital bed capacity and changes to national and local authority healthcare spending. Its effect was the creation of intermediate care under a unique set of socio-political conditions and whilst equitable services, care quality and patient safety where goals other driving forces were more influential.

One of the most prominent factors in the creation of intermediate care was the increased demand for health and social care services at the same time as a perceived decline in NHS rehabilitation services in the 1990s (Stevenson & Spencer, 2002). The impact on the acute care sector and the rhetoric justifying policies and developments to divert such demand was clearly the impetus for the emergence of intermediate care (Wade, 2004). The influence of demographic changes in the UK, technical and pharmacological advances and the increased awareness and expectations of the consumer was being balanced with changes in supply, resources and new financial incentives (Wade, 2004).

The demographic transition was associated with people living longer with chronic and multiple conditions, inevitably leading to complex medical management. In 1948, the NHS was founded and at that time 48% of the population died before they were 65 (Oliver et al., 2014; ONS, 2018a). In the latter years of the 20th century, demographic trends changed the underlying population in the UK. Whilst the population grew by only 5% between 1981 to 1997, and there was a drop in those aged between 65 to 74, there was a notable growth of 18% in those aged between 74 and 85. However, the most growth was seen in the over 85's which increased by 80% (Audit Commission, 1997; ONS, 2018b). In 2000, the NBI found that the over 65 age group occupied two thirds of hospital beds, in contrast to the 15 to 64 aged group which accounted for the other third. Wade (2004) contended that issues with 'bed blocking' and managing 'bed capacity' were foreseeable as older people, whose increased likelihood of multiple pathology and reduced functional reserve, were likely to require longer recovery times in hospital. Steiner (2001) asserts that nursing staff shortages also aggravated the management of hospital beds at this time.

In their analysis of intermediate care, Vaughan & Lathlean (1999) identified that there had been a fall in acute and ‘geriatric beds’ in the preceding twenty years up to 1998/9 from 155000 to 108000. In the same period, general and acute admissions had increased from 4.560 million to 6.514 million and that length of stay in acute and geriatric beds had decreased. In summary, fewer beds were available to satisfy an increase in admissions and patients stayed in beds over shorter periods of time (Vaughan & Lathlean, 1999). Reactionary measures included increasing throughput by managing the length of a hospital stay and through planned admissions (day cases) which became important strategies to managing the increased demand for beds (Roe & Beech, 2005).

The availability of social security payments in the 1980’s for anyone qualifying for supplementary benefit (irrespective of need) led to an expansion in the voluntary and private sector residential and nursing homes. The effect was to increase the independent sector’s residential and nursing home beds by 242% between 1982 to 1996 (Roe & Beech, 2005). In contrast, local authority residential bed availability fell by 43% and the provision of home care for the over seventy fives, fell by 25% (Roe & Beech, 2005). The shift from the public sector to the private sector enabled healthcare authorities to reduce their provision of long-term care by closing geriatric and psychogeriatric wards (Wade, 2004). A greater demand, amidst a roll back of services, was met with financial incentives to encourage cost efficiency and to develop cost reduction strategies. This was greatly intensified by the introduction of the ‘internal market’ by the then Conservative Government. This caused a purchaser/provider split in the NHS which led to NHS hospitals and their providers competing amongst themselves. The net effect during the

1990's was an increase in demand, particularly, from older people when local authority and NHS provided services were reducing (Roe & Beech, 2005; Wade, 2004).

Advances in technology and pharmacology also increased the demand for chronic care support. These advances had the effect of universally improving life expectancy and enabling those with serious disabilities to extend their lifespan (Roe & Beech, 2005). It is also important to note that such advancements facilitated more intensive therapies to be delivered at home, making home-based care more feasible (Roe & Beech, 2005; Steiner, 2001). In the 1990's there was an increase in consumer awareness, knowledge and expectations that created a demand for better rehabilitation services. Additionally, there was a natural preference for rehabilitation services to be focused at home as an alternative to hospital or institutional residential care (Roe & Beech, 2005).

There have been strong driving forces which have shaped intermediate care, including a reduction in NHS rehabilitation services aggravated by a governmental approach to open the NHS to market forces ('marketisation') and competition creating a division between providers and commissioners. Arguably such strategies were not primarily focused on patient care and establishing a patient safety culture, instead these took valuable resources away from services which were providing older adult care and rehabilitation. Moreover, a population increase seen in older age groups and an increase in demand for rehabilitation all contributed to the development of intermediate care with many contributing factors still relevant to its provision. Creating division and contracting providers outside of the NHS may introduce different values, attitudes, perceptions, competencies, and inconsistencies not conducive with collaborating to keep patients safe

and prevent systemic risk. This may have the opposite affect and introduce factors which are unhelpful and influence risk perceptions at an occupational therapy level and, therefore, impact positive risk-taking decisions.

1.2.3 Reablement

The ‘Reablement’ service model is integral to home-based rehabilitation and facilitates people to keep and refine their skills to continue to look after themselves. This is aimed at those who were at risk of needing social care or an increased intensity of care (Beresford et al., 2019). A widely accepted definition of ‘reablement’ was offered by De Montfort University during an evaluation of Leicestershire’s reablement services and adopted by the Care Services Efficiency Delivery (CSED):

> ‘…services for people with poor physical or mental health to help them accommodate their illness by learning or re-learning the skills necessary for daily living’.
>
> De Montfort University (2000, cited in CSED, 2007 p.1)

The inclusion of the ‘Reablement’ model into intermediate care was subject to definitional confusion and a crossover of services. Clear definitions of service provision and roles therein are important to establishing a universally focused culture of patient

safety and effective risk management. Grant et al. (2013) suggests that the circumvention of potential deleterious healthcare outcomes requires clearly defined pathways starting at health care policy to inform a culturally competent service delivery.

The National Service Framework for Older People (DOH, 2001) highlighted 'reablement' as an important aspect of rehabilitation, though it was not directly associated as a model of care in its own right or specifically within intermediate care delivery. The proposal of a new layer of support and care between primary and secondary services backed by new funds, expanded care models in the NHS and social services. From the perspective of the NHS these were targeted at admission avoidance and supportive discharge through the inclusion of intermediate care initiatives. Similarly, and at the same time, social services were developing 'reablement' services for those who were not acutely ill (Parker, 2014). Parker (2014) asserts that there was confusion and overlap between intermediate care and reablement services, aggravated by definitional similarities to minimise support and maximise independency.

Reablement is about facilitating people to do things for themselves, instead of having things done for them (Petch, 2008). This reduces reablement down to its primary aim of increasing independence. In contrast, the Social Care Institute of Excellence (SCIE) offer guidance that 'reablement' should also address psychosocial needs to maximise a person's overall confidence and quality of life (SCIE, 2013). Community rehabilitation services, intermediate care and reablement all focus on a person's functioning, social and environmental barriers that inhibit independence and, therefore, their service boundaries are quite often indistinguishable (NICE, 2017, 2018; SCIE, 2013).

The divisions between ‘intermediate care’, ‘rehabilitation’ and ‘reablement’ had become blurry, in part, driven by service integration into a ‘whole system’ approach to providing older people post-acute care (DOH, 2014; SCIE, 2013). However, reablement has become one part on the continuum of intermediate care (SCIE, 2013) and the National Audit for Intermediate Care (NAIC) Report 2013/4 expanded its audit to include ‘reablement’ services, thereby, formally including it within the scope of intermediate care (NAIC, 2013, 2014).

1.2.4 Models of Intermediate Care

In this part of the chapter the scope of intermediate care will be discussed. This will provide an overview of it service models, emphasising its area of responsibility and the limitations to its service provision. Demographic information will be identified in each of its service models to provide an understanding of the client group. Additionally, intermediate team composition and roles will be presented and their requirement to provide a comprehensive assessment (including a risk assessment) of those accessing intermediate care services will be discussed. Understanding the occupational therapy roles within these service models in relation to risk management is important to this research programme in order to appreciate how to investigate such imperatives.

Intermediate care is a broad service sector, however, the NAIC audit in 2013 defined four distinct service models:

- Crisis response services, which provide short-term care (up to 48 hours only)
- Home based services, that are provided to people in their own homes by a team of different specialties, but mainly health professionals, such as nurses and therapists
- Bed based services, delivered away from home, for example, in a community hospital
- Reablement services, to help people live independently, provided by a team of mainly social care professionals in a person's home.

(NAIC, 2013 p.38)

In 2017, NICE published guidance on intermediate care and reablement for those commissioning services and for those who were practicing within its remit. The 'supporting infrastructure' in this guidance (1.2) recommended that crisis response, home based, bed based and reablement services should be made available locally and be delivered by a multidisciplinary team. Additionally, the importance of integration, mechanisms to promote good communication, uncomplicated referral systems, risk assessment, flexibility to work across the intermediate care remit and that team composition reflect service user needs were recommended. Moreover, an intermediate care team should comprise of a broad range of disciplines that include, occupational therapy, physiotherapy and speech and language therapy with skills and competencies to deliver intermediate care packages that include comprehensive geriatric assessment (NICE, 2017).

Counter to the ideals of integration, the NAIC published clarification on the boundaries and exclusions of these intermediate care models. Crisis response services will not include mental health resolution services or be part of a community matrons/active case management service. Home based rehabilitation will not include single condition rehabilitation or early supported discharge (for example, stroke), general district nursing services or mental health rehabilitation. Bed based service will not include single condition rehabilitation or general community hospital beds not designed for intermediate care. Reablement will not include social care services offering long term social care (NAIC, 2019). Understanding these exclusions is important in relation to researching the risks associated with occupational therapy intermediate care. They emphasise intermediate care as a short-term rehabilitative model which does not focus on one specific or single client condition or mental health rehabilitation.

In 2017, the NAIC reported that the demographic profile of those accessing intermediate care was as follows: home based services were accessed by those whose average age was 80, for bed-based services the average age was 83, and for reablement was 79. The proportion of those in bed-based services in their 90's and above had plateaued at 25% after increasing every year from 2013 to 2015. The audit acknowledged the expansion of the older population will accelerate over the next 20 years (NAIC, 2017). This emphasises the importance of embracing risk and risk management in occupational therapy intermediate care to support a growing older adult population to be safe and to maintain their independency between the interface of hospital and their home and in turn highlights the importance of this programme of research. Additionally, the effectiveness

of its service models to meet demand placed emphasis on research and development and this was highlighted by the NICE intermediate care guideline committee (NICE, 2017).

The breadth of service provision, organisational structure, team composition and roles and the demographic profile of the population accessing intermediate care services all have implications to occupational therapy risk management. In the next part of this chapter, occupational therapy within the intermediate care service models and its importance and benefit to older adult health and wellbeing are discussed.

1.2.5 Occupational Therapy and Intermediate Care

Occupational therapy is a key health and social care profession in all intermediate care service models discussed in the previous part of the chapter. Performing occupation is important in all levels of ability and occupational therapy interventions are tailored to capitalise on existing functional skills or to improve upon them in relation to the level of support needed. The profession of occupational therapy places ‘occupation’ at the centre of practice, education, and research (COT, 2015). The premise being, people need to engage with occupations and without them they could not survive or maintain their lives (Christiansen, 2005; Wilcock, 1999). The European Network of Occupational Therapists in Higher Education (ENOTHE) reached a consensus on the definition of ‘occupation’ as:

> ‘A group of activities that has personal and sociocultural meaning, is named within a culture and supports participation in society. Occupations can be categorised as self-care, productivity and/or leisure.’
>
> (COT, 2015 p.xiii)

This makes occupational therapy universally relevant and beneficial whether a person is accessing intermediate care home based, reablement, crisis response or bed based services. To give further context and explanation, occupational therapy will be examined, and its core concepts and models of conceptual practice will be discussed in relation to risk management in this part of the chapter.

Self-care, productivity, and leisure are common occupations that represent a cycle of activities commonly performed on a daily basis and between cultures (Christiansen, 2005). Self-care would typically include sleep, washing, dressing, and feeding; productivity may include cleaning, paid or unpaid work, and leisure involves discretionary activities, such as play (i.e., hobbies and socialising). They should not be considered mutually exclusive, for example, engaging in sport may constitute ‘productivity’ and at the same time fulfil psychological needs as part of a ‘leisure’ activity (Christiansen, 2005; Duncan, 2011; Molineux et al., 2010). In this context, positive risk-taking can address a multitude of client objectives and needs.

Indeed, occupations have many dimensions, they hold meaning for those that engage in them, they require the capacity to plan, move, sequence, organise or apply a particular technique or skill and they can be done for oneself or for someone (Christiansen, 2005). Occupation may hold different meaning and value at different times, for example, dressing (self-care) is an everyday task which may become more meaningful when performed for an important occasion. How we engage in occupation defines us, in the way we choose, value and perform them to connect to the social world (Christiansen, 2005; Duncan, 2011). Moreover, performing an occupation is subject to a person's functional ability, motivation and whether the environment is enabling or inhibiting their performance (Christiansen, 2005; Duncan, 2011).

Occupational therapy has developed from medical and social sciences. Its focus is on activities that make up an occupation, however its complexity is to influence and shape these activities by constructing interventions that will enable a client to achieve a safe level of competence in performing them (Christiansen, 2005; Duncan, 2011; Molineux et al., 2010). Commonly, occupational therapists concentrate on activities of daily living (ADL) and the instrumental activities of daily living (IADL), and their assessment is used to determine the ability (or inability) to live independently. Basic ADL include, dressing, bathing, grooming, ambulating, toileting and transferring. IADL describe more complex activities, these can include, managing finances, shopping, and cooking. In this context, there are many potential areas where performing (or not performing) occupation may present a risk to a person's health and or wellbeing.

Occupational therapy has several conceptual models of practice which approach occupation, the person, and their environment from different perspectives. These models cover a broad framework of considerations and therefore support a person's risk assessment by alerting the therapists to where there is a likelihood of occupational dysfunction. In this context, it is important to this research programme to understand the scope of these conceptual models through the lens of risk and how they may be used to increase occupational performance to effectively investigate these imperatives.

Difficulties related to performing activities and occupational tasks are commonly referred to as occupational dysfunction (Miyake et al., 2018). Occupational dysfunction has been associated with poor mental health and poor health-related quality of life (Fujii et al., 2021). In this context, reduced functional capacity can be potentially harmful when valued activities which could include preparing food to eat and or exercise can no longer be performed effectively and or potentially safely. The relevance to assessing these in relation to risk is that one area of occupational dysfunction or combination thereof has the capacity to cause harm. Moreover, a person's level of inability to perform such activities will also indicate the likelihood of such harm. The combination of assessing the likelihood and harms that may be involved in performing an activity is important to a risk assessment and to target intervention. In the next section, key occupational therapy conceptual models of practice are discussed highlighting their importance to targeting intervention and to identifying areas of reduced functional capacity. Additionally, these conceptual models indicate the broad area of risk considerations within occupational therapy provision.

The Canadian Model of Occupational Performance and Engagement (CMOP-E) and the Person Environment Occupational Performance Model (PEOP) share common features. Both models provide a bridge between the biomedical model and the sociocultural model of care. They focus on the client and the relevant intrinsic and extrinsic influencers on everyday occupation. They emphasise the dynamic relationship between person, environment, and occupation as a person changes over their life course (Christiansen, 2005; Duncan, 2011; Townsend, 2007).

The Model of Human Occupation (MOHO) (Kielhofner, 2002) focuses on occupational performance using different terminology and perspectives. This model seeks to explain how occupation is motivated, patterned, and performed. A person is conceptualised in three theoretical constructs, volition (motivation), habituation (patterning) and performance capacity which includes a person's mental and physical capabilities and their subjective experience of occupation (Kielhofner, 2002).

The conventional practice of occupational therapy is reflective of European and Western epistemological influence (Iwama, 2006). The predetermined concepts in the MOHO, CMOP-E and PEOP conceptual models of practice tie into a person's narrative, arguably, impressing their importance on the client. However, occupational therapy is practiced on a global scale and the relevance of such predetermined concepts within other cultures is contentious (Duncan, 2011; Iwama, 2006).

Iwama (2006) introduced the Kawa (River) model that offered a departure from the way theory is structured and translated into occupational therapy practice. The Kawa model uses a river as a metaphor, it depicts a starting point (birth) and a point where the rivers energy dissipates into the sea (end of life). The river represents a person's life energy in a continuum where at any point a cross section of the river can be viewed. A cross section shows how the river is flowing. The river bottom and sides represent the physical and social environment. Rocks on the riverbed represent problems and difficulties that inhibit the flow of the river. The driftwood is two dimensional and can either be a person's attributes or liabilities, for example, enable the flow or inhibit the flow. The Kawa model's naturalistic properties and contextual philosophy facilitate a temporal perspective of a client's life to explore their own narrative, by offering an unbiased and recognisable framework (Duncan, 2011; Iwama, 2006).

These models present different considerations and risk perspectives for occupational therapists. The risk of not engaging in or performing occupations safely in relation to what a client needs or wants to do has the potential to cause harm. The CMOP-E and PEOP conceptual models focus on the broad perspectives of person, occupation, and environment. Considering a 'persons' illness or impairment must be done in the context of how they engage and perform 'occupation' and whether the 'environment' is conducive with such performance are all relevant to risk assessment to keep them as safe as possible. The MOHO conceptual model emphasises that there is a hierarchy of considerations which include a person's volition, habituation, and performance capacity and how these shape a person's skills. Functional issues at a skill level can in turn affect occupational performance, participation, and identity. This emphasises that occupational

therapists are likely to see risk at a very fundamental level knowing that a skill deficit has the capacity to cause harm to the wider occupational needs of a person. The Kawa (River) model might represent such occupational performance issues as the river flow being inhibited. This depicts problems with performing occupation but unique to this model is its scope to foresee occupational performance issues in the future. In this context, this model is conducive with predicting, planning, and constructing interventions that employ positive-risk-taking as required in occupational therapy intermediate care risk management.

Occupational therapists have many roles within the four intermediate care service models, encompassing home-based, bed-based, reablement and crisis response. Home based care regularly includes assessing home safety, environmental modifications and the provision and training to use aids, equipment, or assistive technology devices (McIntyre & Atwal, 2005). Restorative interventions to help clients learn new or modified ways of performing their ADL's and IADL's are designed in line with the client's values and needs (McIntyre & Atwal, 2005). Lockwood et al. (2020) assert that home based occupational therapy also involves behaviour or task modifications to avoid or adopt specific behaviours to change the way that someone interacts with the environment. De Coninck et al. (2017), in their systematic review of home and community based occupational therapy for frail adults, found the fear of falling was reduced and occupational therapy interventions resulted in positive outcomes which included ADL improvement and increased social participation and mobility.

The focus of crisis response is dependent on client needs and can vary between acute care and social care interventions (Wade, 2004). Occupational therapists understand patients cannot move in and out of hospital when only health needs are addressed (COT, 2016). The Royal College of Occupational Therapists (RCOT) 'Reducing the pressure on hospitals' recommends that occupational therapists are embedded in rapid response teams (COT, 2016). Their focus can minimise the risk of falls and prevent unnecessary hospital admission. This is achieved by assessing the home and advising on home modifications, ensuring the appropriate assistive and technological aids are in place, addressing the fear of falling and incorporating activities to improve strength and balance into daily occupations and routine (COT, 2016). Falls is the leading cause of disability and mortality in the over 75's and can have a major impact on individuals and communities, including fractures, traumatic brain injury and hospitalisation (Pyer et al., 2015). Responding to falls in a crisis situation involves meeting the needs of older people who have fallen to limit the impact and promote immediate and long-term wellbeing. This is achieved through holistic practice and intermediate care skills (Pyer et al., 2015). The importance of urgent care for older people in crisis has seen a recent 14 million pound investment, the purpose is to standardise crisis response across the country, 365 days a year to deliver tailored intermediate care and reablement interventions (NHS, 2020).

Occupational therapy has long been associated with helping people recover skills, confidence and maximising independence and therefore fits well into the model of reablement. Reablement is normally delivered by reablement support workers, reablement assessors and occupational therapists and involves measuring a person's baseline in all aspects of their ADL's (SCIE, 2020). Additionally, occupational therapists

can contribute to a reablement team by training reablement workers and utilising their skills in the management of these services (SCIE, 2020).

Bed based care is an important service model in occupational therapy intermediate care and its provision is fundamental to mitigating bed care related risks to its service users. As part of a multidisciplinary team, occupational therapists' role in bed based care is to provide a short-term programme of intensive therapeutic support for up to six weeks. NICE (2017) describe bed based services as relevant in many practice settings, including but not limited to, acute hospital, community hospital, residential care home, nursing home, stand-alone intermediate care facility, independent sector facility, local authority facility or other bed-based setting. In contrast, Regen et al. (2008) in their evaluation of intermediate care found that freeing up acute care beds had become the dominating agenda over personalising care and support to promote health and wellbeing.

In bed based settings, occupational therapists focus on bed based activity, positioning, safe transfer, and bed mobility. Additionally, maintaining skin integrity through the provision of pressure care in a bed based setting is also an important component of occupational therapy (Macens et al., 2011). Pressure ulcers can be life threatening in older people due to diminished skin integrity and pressure ulcers can develop in as little as 1 to 2 hours (NHS-Inform, 2020). Macens et al. (2011), in an evaluation of occupational therapy pressure care in practice, concluded that occupational therapy has a pivotal role in pressure care provision for older people. Additionally, the benefits of occupational therapy and its role in pressure care needs to be made more explicit (Macens et al., 2011).

In a study investigating the development and integration of occupational therapy in intermediate care, Grant et al. (2007) surveyed 414 occupational therapists from the then College of Occupational Therapists Special Section – Older People. Grant et al. (2007) focused on the development of occupational therapy intermediate care, specifically in relation to 'Standard 3' of the NSF for Older People (DOH, 2001) which introduced intermediate care. Participants were asked about how 'Standard 3' had been integrated into their place of work. Four themes were identified, 1) differing descriptions of intermediate care, 2) differing relationships between intermediate care and mental health, 3) extended occupational therapy role, 4) integrated equipment stores and occupational therapy (Grant et al., 2007). Moreover, problematic areas were identified, these being, funding issues, prioritising physical health and accessibility for mental health clients (Grant et al., 2007).

In summary, this part of the chapter has highlighted the nature of occupation as it pertains to occupational therapy and its breadth and complexity in the provision of intermediate care. It has also emphasised the importance of understanding these imperatives in relation to occupational therapy's conceptual models and how these emphasise the scope of potential risks within its service provision. Lastly, Grant et al., (2007) highlight there are difficulties and problematic areas in occupational therapy intermediate care service provision. As such, this is likely to affect how risk is embraced, managed and how positive risk-taking is employed which is important information to investigate risk and risk related decisions in this research programme.

1.2.6 Intermediate care risk management

The intermediate care risk management principles are discussed here as a precursor to introducing the complexity of older adult occupational therapy and before focusing on the concept of risk and discussing its theory. In this part of the chapter the principles of risk management and positive risk-taking are introduced as recommended for all intermediate care practitioners.

As part of person-centred planning, intermediate care practitioners including occupational therapists are required to conduct a risk assessment with those entering intermediate care and at regular intervals, as well as when there has been a significant change in health and or support. A risk plan should be recorded with the person (and their family and carers, as appropriate) (NICE, 2017). The risk management process should cover: -

- assessing the risks associated with the person carrying out particular activities, including taking and looking after their own medicines
- assessing the risks associated with their environment
- balancing the risk of a particular activity with the person's wishes, wellbeing, independence, and quality of life.
- strategies to manage risk, for example, specialist equipment, use of verbal prompts and use of support from others
- the implications of taking the risk for the person and the member of staff.

(NICE, 2017 p.11-12)

Balancing the risk of the activity and weighing up its benefit and potential harm denotes positive risk-taking which intermediate care occupational therapists are required to support as part of their interventions (NICE, 2017).

There are a broad set of risk management criteria to consider in intermediate care provision and all of these emphasise the importance of activity, the person and their values, appropriate risk taking and their environment. It also highlights the breadth of consideration necessary to employ positive risk-taking strategies. In this context, these are important components to understand in order to investigate risk and how decisions are made in relation to positive risk-taking in occupational therapy intermediate care provision. In the next part of the chapter the challenges of older adult occupational therapy are discussed to contextualise these risk management principles.

1.3 Occupational Therapy with older people

This part of the chapter will focus on, aging and the complexity of older adult occupational therapy in relation to aging pathologies, frailty, and age-related risk factors before discussing the concept of risk.

With an increase in life expectancy there will be an inevitable increase in the demand for age related chronic care (De Coninck et al., 2017). Many older people with chronic care needs experience limitations in their physical activities and function. The need for care often relates to these limitations and, therefore, surpasses the remit of medical care and emphasises the need and requirement for social care. Maintaining function is important to live independently and reduces the burden on the caregiver. However, aging can produce many barriers to engaging and performing occupation and increase dependency (McIntyre & Atwal, 2005).

In relation to occupational therapy, it is helpful to understand aging in terms of changes to body functions, disease pathology, frailty, difficulties with activities and the environment (McIntyre & Atwal, 2005). Aging is a natural process and develops within a multitude of personal factors which include physical, psychological, and cognitive status, and function, interpretations of personal life experiences and immediate and long-term goals (Perkinson & Barney, 2016). These personal factors are shaped by social, cultural and the built and natural environments. Aging can challenge occupation and these personal and environmental factors come into play influencing performance and, ultimately, the extent of occupational participation (McIntyre & Atwal, 2005; Perkinson & Barney, 2016). Perkinson & Barney (2016 p.3) define ageing "as an ongoing biopsychosocial process that is interactive, situated, and negotiated within specific sociocultural, temporal, and physical contexts".

The way in which a person responds to illness changes as we get older and there is quite often a tenuous balance between health and what threatens it. Whilst occupational

therapists' core focus is on occupation, it is important to consider how body function and / or body structure impairment potentially has more of an impact on older peoples' occupational lives (McIntyre & Atwal, 2005).

Age-related disease and impairment become more likely in old age as there is a cellular and subcellular change. Some cells in our body structure, those being, skeletal muscle fibres, cardiac fibres and neurones do not replicate, so these cell populations decline with age, and this means tissue damage is not replaced (McIntyre & Atwal, 2005; Uttara et al., 2009). Moreover, an accumulation over time of glucose binding with proteins in and outside of cells forms irreversible links between molecules contributing to stiffening and loss of elasticity in tissues (McIntyre & Atwal, 2005). This process promotes the overproduction of free radicals which can cause oxidative damage creating toxicity and chemical imbalances that contribute to cell membrane disruption and cell death. Oxidative damage is linked to aging, atherosclerosis, cancer, diabetics, rheumatoid arthritis, post-ischemic perfusion injury, myocardial infarction, cardiovascular diseases, chronic inflammation, stroke and septic shock, and other degenerative diseases in humans (Uttara et al., 2009). Additionally, it is important to remember that many individual factors impact on age related changes in body structure and body systems. Genetic disorders and inherited disease, gender, fitness, nutrition, rest/activity balance, alcoholic drinks and smoking amongst others can adversely affect the ageing process (McIntyre & Atwal, 2005).

The impact of long-term multiple conditions and their pathologies are superimposed upon normal age-related changes and occupational therapists have a responsibility to

understand these changes in relation to function and occupation. Multiple pathology is likely in older age, and it is important to assess each pathology in relation to its impact on health and wellbeing. With age brings years of associated roles and occupational identities and areas of occupational performance will have a range of personal meaning.

Aging and multiple long-term conditions that cause low energy, slow walking speed, poor strength are risk factors for frailty (British Geriatrics Society, 2018). Coker et al. (2019 p.2) define frailty as a "a condition of vulnerability characterised by a loss of biological reserves across a range of physiological systems and functional domains". Frailty is a degenerative disorder and as it progresses frailty syndromes can develop which include multiple falls, acute confusion/delirium, sudden loss of mobility and incontinence. Moreover, the complexity of frailty in older people will increase the likelihood of hospitalisation, dependency, disability, and mortality. However, frailty is not a foregone conclusion and alike 'individual lifestyle factors' impacting the aging process, these modifiable risk factors mean that frailty can be mitigated with good nutrition, physical activity, avoiding loneliness and minimising alcohol intake (De Coninck et al., 2017; Provencher et al., 2012).

As frailty is a gradual process early identification is important. Provencher et al. (2012) assert that occupational therapists should consider multidimensional interventions such as falls prevention programmes to target behavioural and environmental risk factors before severe disabilities develop. Additionally, optimising residual capacities through rehabilitation orientated interventions may reverse the onset of frailty. Therefore, environmental modifications together with rehabilitation prevents frailty developing to a

point where dependent care and support become the only option. Minor changes can have major impact and occupational therapists can tailor interventions to the specific and complex needs of this population (Provencher et al., 2012). This requires great attention to the risks involved and what activities need to be prioritised to ensure a minimal amount of occupational disruption and client benefit.

Risk is multidimensional and there are many considerations from a theoretical and practical point of view, especially in occupational therapy intermediate care. In this context, it is important to review the risk literature that will help and support its investigation. Understanding risk in relation to how it is defined, risk perception and how experience and expertise may affect such perceptions, a person's rights in relation to risk, occupational therapists risk related responsibilities are all relevant to this research programmes effectiveness to investigate positive risk-taking. In the next part of this chapter these imperatives are discussed.

1.4 Risk

This part of the chapter will introduce and discuss the complexity of risk, its breadth of meaning and interpretation, common misconceptions, and the concept of 'value' in risk taking. Additionally, a risk definition will be provided which has been adopted as a 'working definition' of risk for this programme of research. There are many dimensions to understanding risk and these must be reflected in its definition. Additionally, this is

important to understand positive risk-taking and its complexities in order to support its investigation in this research programme.

The word ‘Risk’ is a short single syllable word, abrupt and requiring context (Carson, 2008). Risk means different things to different people in different situations. The world of business and commerce may view risk as profit versus loss or investment against return or lack thereof. Those in the fire services may well equate risk more to immediate danger or exposure to a life-threatening situation. Thrill seekers in extreme sports deal with high-risk activities to gain a ‘high’, balancing the potential harm with its benefit. The provision of health and social care at national and local levels share many of these risk concepts. For example, there is a risk to their financial sustainability if they do not operate at an optimum level, also, their business is preventing loss of life and ill health, and this must always be approached by analysing the benefits against the harms.

The concept of risk is unbounded and is commonly thought about on an individual level or global scale. Ranging from global health crises or introducing or restructuring elements of health and social care to thinking about client risk taking, the concept of risk has a broad focus (Titterton, 2004). Quite often society is quick to deplore dangerous and reckless risk taking and, conversely, condemns paternalism when our rights to take risks are threatened. However, understanding that risks are commonplace, subject to context, and undertaken by everyone does not make risk an easy concept to understand (Carson, 2008).

The theoretical considerations of risk are numerous, Trimpop (1994 p.9) alludes to risk as involving "conscious and non-conscious behaviour, outcome and consequence uncertainty, benefits and losses, intrinsic and extrinsic rewards, individual and societal risks, and the subjective experience of risk." In this context risk can be difficult to predict and quantify, however, risk effects in society are objectively measured. Information relating to the magnitude of a risk can be determined by applying probability weights to the negative effects. This approach is a primary characteristic of actuarial, healthcare, environmental and probabilistic measurement of risk (Vasvári, 2015).

Dictionary definitions describe risk using the concepts of uncertainty, harm and likelihood. However, various synonyms are used, and 'harm' is commonly substituted by impact, danger or consequences. Likelihood is sometimes substituted by probability or chance. Uncertainty, in risk definitions may be left out but it is implicit, however, without it there is no risk (Carson, 2008).

In risk theory the concepts of 'likelihood' and 'harm' are always present in one way or another. It is important to understand 'uncertainty' has a different relationship within risk. This is because 'uncertainty' does not directly affect risk, as ignorance of information relating to uncertainty of the 'likelihood' or 'harm' involved does not change risk itself (Carson, 2008). Conversely, information that changes the perception of 'uncertainty' in relation to the degree of 'likelihood' and or 'harm' can change the judgement of a risk. Therefore, 'uncertainty' is subject to information and is a dimension of risk in relation to forming judgements of likelihood and harm. Paradoxically, we can never exactly know how likely or harmful a risk activity will be, but we can elicit some

control over uncertainty by ensuring we have the right information (Carson, 2008). Carson (2008) differentiates ‘likelihood’ and ‘harm’ as elements inherent in risk and ‘uncertainty’ as one (amongst others) as a dimension of risk which may be influenced by the decision maker. Likewise, MacCrimmon and Wehrung (1988, cited in Carson p.20) made a similar differentiation between the ‘components of risk’ being magnitude, chance, and exposure to loss, being different, to the ‘determinants of risk’, those being, lack of control, lack of information, and lack of time. Carson (2008 p.242) defines risk as,

> ‘…an occasion when one or more consequences (events, outcomes and so on) could occur. Critically (a) those consequences may be harmful and/or beneficial and (b) either the number and or the extent of those consequences, and or their likelihood, is uncertain and or unknown’.

Arguably, this definition might still not be considered complete or cover all the components relevant to risk, for instance, is the omission of ‘value’ in this definition, relevant? Or is it inferred by benefit? If so, do we value everything we benefit from, and benefit from everything we value? This is a tenuous link and alludes to a further consideration, that being, whether risk can occur without a consequence being valued. Aven et al. (2011) explored the concept of risk from an ontological perspective and found value was included in many definitions relating to human interaction. In these cases, the components of risk, uncertainty, likelihood and harm were related to human value and or the value of human life itself (Aven & Renn, 2009; Aven et al., 2011; Rosa, 2003).

Occupational therapists place great emphasis on value in enabling their clients to take risks. Persson et al. (2001) considered, the concept of occupational value as a prerequisite for meaning, which has three dimensions: concrete, symbolic and self-reward. Concrete value can be conceptualised as those activities that elicit a tangible or measured outcome, for example, learning a new skill. Symbolic value is seen as the signification of an occupation as perceived by the person and this has personal, cultural or universal (cross culturally accepted) levels. For example, gender symbols can be a strong influence on occupational choice (Persson et al., 2001). The self-reward value dimension is focused on the immediate rewards inherent in the experience of performing an activity, encapsulated by taking enjoyment in an occupation (Persson et al., 2001).

Trimpop (1994) contends that risk is hard to describe in a simple definition as different situations and different perspectives lead to different definitions of risk taking. Moreover, confusion can arise when the terms ‘risk’ and ‘hazard’ are used interchangeably. An example of this would be smoking, as it is frequently described as a risk, when it should be described as a hazard (Breakwell, 2007); the risk of smoking is referring to engaging with the hazard (smoking) which carries a probability (likelihood) of consequence (harm). This subtle but important difference is a precursor to understanding how risks develop from hazards and how these are both socially constructed in relation to material objects (Breakwell, 2007).

The social organisation of risk is quite often linked to changes in risk tolerance after traumatic events in society have been brought into focus by media and public discourse (Stallings, 2014). For instance, the increase focus in ‘lifestyle related’ illness is reflected

in health protection and prevention legislation, political rhetoric, and media focus, especially, in relation to unhealthy behaviours (i.e., smoking and alcoholism). This has changed society's risk perception and attitudes towards it. Other individual behaviours, such as gambling, sexual promiscuity and obesity have also undergone similar political and social scrutiny (Baggott, 2011). This has both simultaneously brought an increased risk awareness but at the expense of introducing paternalism to limit personal choice, nurtured stigmatisation, and intolerances to these behaviours. What constitutes 'risk' is widely debated in society, reflective of its values, shaped by public and political opinion which is largely determined by how risk is communicated by mass media. Occupational therapists (like everybody else) are affected by these influencers, potentially causing an overestimation or underestimation in their perception of risk.

1.4.1 Risk perception

In this part of the chapter risk perception is discussed in relation to the physical and psychological aspects of perception, irrational and biased decision making and the challenges to applying scientific methods (psychometrics) to measure and quantify risk decisions.

Risk perception refers to how people think and feel about risks, and it can be an important determinant of protective behaviour. Paek & Hove (2017 p.1) define risk perception as '…people's subjective judgments about the likelihood of negative occurrences such as injury, illness, disease, and death'. Slovic & Peters (2006) contend that people perceive

and act upon risk in two fundamental ways, ‘risk as feelings’ and ‘risk as analysis’. The latter being more deliberate, logical, and reasoned. Paek & Hove (2017) refer to these as emotional and cognitive dimensions. Commonly, risk perceptions are influenced when there is dread associated with an uncontrollable risk or where there is limited control over a harmful outcome. Such feelings may potentially invoke an affective (emotional) response and influence risk judgements and whether a risk is accepted (Ferrer & Klein, 2015). Hofstede (1984, cited in Vasvári, 2015 p.33-34) identified four social and cultural factors that influence risk perception, 1) social inequalities, attitude to authority and power distance, 2) individualism versus collectivism, 3) masculinity versus femininity, 4) methods of managing uncertainty, for instance, strong versus weak uncertainties to determine acceptance or avoidance.

Sensory modalities, incorporating our seven senses, vision, auditory, olfactory, gustatory, proprioceptive, vestibular, and tactile, allows us to identify, evaluate and associate meanings to an environment (May-Benson, 2009). This process has a physical and psychological component. The physical component incorporates our sensory organs receiving information from environmental stimuli. This information is routed through the nervous system to our brain. The psychological component has far more impact on perception and incorporates how the information is processed, using many factors which sometimes include beliefs, values, attitudes, needs, interests, and fear. It is widely accepted that there are three stages to attaining awareness and understanding sensory information, these stages are selection, organisation, and interpretation (Qiong, 2017).

Risk perception arises from subjective thought which can be unhelpful in determining the true nature of a risk. A formal risk assessment introduces a systematic approach to estimating and evaluating risk to exclude subjectivity as much as possible (Breakwell, 2007). However, risk assessment cannot occur without hazards being perceived as part of risk perception, as only perceived environmental stimuli and cognitions can be processed (Trimpop, 1994). These cognitive processes also include some less obvious psychological factors which are related to how we make judgements in conditions of uncertainty, namely, the effect of heuristics and biases (Breakwell, 2007; Trimpop, 1994; Tversky & Kahneman, 1974).

The contemporary underlying assumptions of how heuristics and biases factor into risk perception and decision making has been provided by a wealth of psychometric research. Breakwell (2007 p.34) defines psychometrics as 'the science of measuring mental capacities and processes.' Conscious and unconscious cognitive processes in risk related decision making do not lend themselves to physical measurement and in this respect, psychometrics has developed systematic methods and models of statistical estimation (Breakwell, 2007). The development of this area of research has discovered mental strategies, or heuristics, that people employ in order to make sense of an uncertain world (Slovic, 1987; Tversky & Kahneman, 1974). Heuristics provide a shortcut to problem solving, they are immediate, valid in some circumstances but are not always optimal. Some of the time they can be inaccurate and lead to large and persistent biases which has serious implications for risk assessment (Slovic, 1987; Tversky & Kahneman, 1974). This can make determining what thought processes and what conscious and unconscious cognitions are used when making risk judgements very challenging and arguably not

required to establish the relationship between the information available and the decision made (Harries & Harries, 2001a; b). As such, this is an important consideration for shaping this programme of research.

Risk assessment depends on the context of both the situation and individual judging the risk, as well as inherent and evolutionary dispositions to engaging with risk prone situations (Trimpop, 1994). Moreover, Trimpop (1994) argues that risk taking has become an advantageous behaviour to survival. Dawkins (1984, cited in Trimpop, 1994 p.49) identified, cultures and their propensity and tolerances in risk taking is a product of how they develop in the wake of environmental changes, migratory patterns, survival needs and social developments.

Deliberating risk suggests rational thinking, but in reality, risk judgements often involve a blend of rational, semi autonomic or non-deliberate processes. Pidgeon (1991 p.132) contends, 'the conditional nature of risk assessment raises the question of which standard of risk we should accept against which to calibrate human biases.' Ropeik (2012 p.1222) contends that 'real risks arise when we are too afraid or not afraid enough, risks that arise, literally, because of the way we perceive risk.' As an advanced society, there is much information and evidence to help us make decisions about risk, however, such evidence is often discarded and we are frequently more afraid about risk then we need to be, and vice versa. Ropeik (2012) refers to this phenomenon as the 'risk perception gap'. Many scientific facts about risk are not always considered when they are judged, which invites irrational thinking, instead instinctive and affective reasoning is used to decide about the truth of the risk presented (Ropeik, 2012).

A risk perception which invokes a conscious or unconscious affective response (i.e., fear) to taking a risk (or recommending someone to take one) is likely to cause the overestimation of its potential harm and therefore increase the likelihood of risk avoidance. As such, these kinds of responses can undermine rationality and the objective assessment of the risk and in turn inhibit positive risk-taking. These are important considerations in relation to investigating risk and positive risk-taking in this research programme.

In summary, how risk is perceived affects decision making under risk and there are potentially a multitude of influencers that may invoke different levels of risk acceptability and intolerances to hazards in a person's subjective assessment of risk. In the next part of the chapter the differences in expertise are discussed in relation to risk perception. In this context, this information will inform this programme of research by highlighting the extent of these differences and whether expert risk perceptions are empirically known to be accurate in predicting risk.

1.4.2 Risk perception differences between expert and novices

There are differences in how experts perceive risk compared to novices (Breakwell, 2007). Also, there are differences in how experienced occupational therapists who are experts in their field process information compared to student and novice therapists (Robertson, 2012; Strong et al., 1995) and this includes information pertaining to risk. This was important to this programme of research as comparison of risk perceptions did

elucidate differences in making decisions under risk and, as such, identified what factors experts consider important. This was beneficial to establishing the areas of practice occupational therapists with less experience find the most challenging in relation to employing positive risk-taking.

Breakwell (2007) asserts that the differences in expert and lay people risk perceptions is empirically recognised, and this has contributed to the complexity and problematic nature of making decisions in relation to controversial hazards. Experts generally rate risk lower, and to a lesser extent there is evidence that their risk estimates are more closely approximate to the available empirical evidence. This is perhaps not surprising given the majority of these studies have investigated risk within an expert's field or profession (Breakwell, 2007). However, where it cannot be assumed that experts have superior knowledge, their risk estimates still differ from that of lay people (Breakwell, 2007). In an aviation study, Thomson et al. (2004) found there were significant risk perception differences between candidate and expert helicopter pilots, suggesting candidate pilots were more inclined to be risk averse and expert pilots' more risk agreeable. Additionally, expert decision making under risk were more veridical to true relative frequencies.

In relation to occupational therapy, experienced occupational therapists have been found to use 'clinical rules of thumb', these mental shortcuts help with complex clinical problems and are commonly referred to as heuristics (Robertson, 2012). Heuristics are sometimes helpful for the formation of quick solutions when attending to multiple factors that have the potential to become overwhelming (Slovic, 1987; Tversky & Kahneman, 1974). These helpful heuristics have also been informed by risk managing risk prone

clinical situations. As such, they will not be as present in novice therapists or students; therefore, they are more likely to rely on analytical and procedural reasoning to problem solve in a therapeutic situation (Barnitt, 1993; Robertson, 2012; Schell & Schell, 2018) including those requiring risk management. Risk perception alike all information processing is influenced by the level of experience a practitioner has and whether the risk has been confronted before. Experience is also likely to dictate what reasoning process is used in evaluating the risk and what counter actions and recommendations are chosen to mitigate it.

There are many challenges faced by occupational therapy novices and students in practice. Experts will not only be well practiced but be aware and well versed in, organisational culture and standards, morals, and ethical dilemmas common within their practice (Sonn & Vermeulen, 2018). Conversely, novices and students may adopt excessive caution and risk averse practice in planning interventions and setting goals, thereby, opposing the principles of positive risk-taking. Reich et al. (1998) used vignettes to investigate occupational therapists and student risk taking propensities and risk related decision making in discharging older people from inpatient acute care. The results indicated that qualified occupational therapists were less likely to overrule patients' wishes by favouring discharge of patients to residential or nursing home, and more likely to favour discharge to patients' own homes than occupational therapy students. Additionally, whilst dementia was found to have no main effect in the results, clinical experience and knowledge of age-related disease and pathologies in older people were significantly associated with different approaches to risk taking in response to the vignettes (Reich et al., 1998).

Risk perception has two main dimensions: the cognitive dimension, which relates to how therapists think and process information, and the emotional dimension, which relates to the way they feel about the therapeutic circumstances and or practice (Paek & Hove, 2017). Occupational therapists' ability to understand, mediate and manage the emotions of self and others undoubtedly has an impact on their effectiveness (Mayer & Cobb, 2000). This describes the concept of emotional intelligence, itself an important aspect in perceiving risk and mitigating it, and necessary for fostering the application of person-centred care and its holistic principles (McKenna & Mellson, 2013). These attributes like any skill acquisition develop with experience. Student and novice practitioners risk perceptions and effectiveness in decision making is not only linked to how they process the information but how emotionally resilient they are when faced with educational and practice stressors (McKenna & Mellson, 2013).

Novices do not have the benefit of experience and therefore lack a frame of reference in which to apply previous situational knowledge, consequently they are bound by other styles of reasoning (analytical and procedural) in which to problem solve risk prone therapeutic situations. In this context, emotional pressures may also influence such decisions in comparison to experts who have developed emotional resilience in their person-centred care. With novices being less likely to embrace risk and more likely to be overly cautious to the point of being risk averse and or risk avoidant is an important consideration in this programme of research. This is because failing to embrace risk counteracts positive risk-taking and in turn potentially causes safety issues and inhibits a service users progress.

In summary, experts do perceive risk differently and their estimates and evaluations of risk are more veridical to known outcomes. However, expert and novice risk perception studies have not focused on occupational therapy to any great extent and there is a lack of occupational therapy literature in this context. Reich et al., (1998) has investigated risk-taking in relation to discharging older adults from an acute care medical ward using vignettes and compared student and qualified occupational therapist responses. Their findings suggest significant differences in propensities to employ risk taking in relation to experience. However, the age of this study and that it is focused on acute care is likely to make this less relevant in the context of contemporary occupational therapy intermediate care provision. This presents a clear direction for this programme of research to investigate risk perception differences in expert occupational therapists in comparison to those with less experience, to highlight what areas of practice experts perceive to be impactful to their positive risk-taking decisions. Additionally, by elucidating these differences would be advantageous to further the understanding of managing risks in older adult occupational therapy, support occupational therapy preregistration courses and inform practice to help occupational therapists who are new to risk assessing in community and intermediate care practice settings.

1.4.3 Occupational therapy and risk assessment

Making decisions under risk will be affected by how intermediate care occupational therapists assess risk and what methods they employ in a risk management process. Understanding these imperatives is important to planning and directing this programme of research.

Occupational therapists in intermediate care help older adults regain control of their lives to remain independent as long as possible after a change in their health at the interface of a hospital transition. Older adults can be highly variable to rehabilitation with fluctuating levels of functional ability (Atwal et al., 2012) making ability levels difficult to predict in order to plan interventions and to arrange appropriate levels of support. In this context, risk assessment can be very challenging. This part of the chapter highlights these challenges in relation to estimating, evaluating and communicating risk before focussing on the current methods recommended for assessing and managing risk in occupational therapy.

Risk assessment is a process of converting subjectivity to objectivity about a risk and this incorporates risk estimation and risk evaluation. Risk estimation determines the possible outcomes, size, impact and severity; and risk evaluation determines the probability of these estimates occurring in relation to an adverse event (Breakwell, 2007). These concepts must be included in a risk assessment. Regarding this research programme, it was necessary to investigate what risks were prevalent in occupational therapy intermediate care before employing other research methods to understand their associated decisional factors and their potential effect on service provision. In this context, risk evaluation (probability of occurrence) preceded risk estimation (impact). Additionally, a risk assessment can be discipline specific, for example, there is a vast difference to how risk is viewed in social sciences compared to medical sciences, consequently, defying a coherent taxonomy. However, there are underlying commonalties of methodological principle. These principles cut across disciplines and commonly involve the identification

and specification of the hazard, an estimation of the harm involved and an evaluation of the likelihood.

Hazards and the risks they may pose carry different consequences for different people, the impact of which cannot be forecast or calculated with absolute precision. In relation to many of the important hazards (global warming, biotechnology, etc) there is great uncertainty to how risk can be assessed to a universally accepted standard in terms of measurement and reliability (Breakwell, 2007). Likewise, how the resulting assessment might be recorded, specifically the language used to describe its likelihood and severity is part of a wide ongoing discourse to how risk information should be disseminated in society (Breakwell, 2007). Risk assessment, irrespective of whether it's global or aimed at an individual can have limitations owing to the hazard defying coherent specification or, that the consequences could be so multitudinous they resist full articulation or measurement (Breakwell, 2007).

In addition to the challenges of measurement and communication in a risk assessment, it is also important to understand that risk factors can combine, thereby, increasing overall risk and complexity in a risk assessment. Synergistic risk refers to how some hazards when combined introduce greater risk then they do when considered singly (Breakwell, 2007). An example of this would be, the more risk factors identified in a falls risk assessment will have a synergistic effect on risk, that being, there will be an increase in the risk of falling (RCOT, 2020). This is an important consideration for this research programme as expert occupational therapists are likely to be more adept at identifying

and linking synergistic risk factors in comparison to novice practitioners. This is likely to make expert risk related decisions more accurate in this context.

Occupational therapy has a discipline specific approach to risk assessment. The underlying principle is,

> ‘Occupational therapy should enable individuals to achieve their full potential. If you want service users to reach their chosen goals and to participate fully in life, this requires you to embrace and engage with risk.’
>
> (RCOT, 2017 p.1)

Risk should not be seen as a barrier as it is intrinsic to a service user’s progress. Learning or relearning a skill, participating in a chosen activity, or returning home from hospital all pose risk but also carry benefits to wellbeing. Therefore, risk should not stop a person realising the benefit from these activities (RCOT, 2017).

The RCOT (2017) contend that occupational therapists should use the ‘risk enablement process’ to guide planning and decision-making to overcome difficulties and make achievements safely. There are a number of steps to the assessment and enablement of safe risk-taking, these are, 1) value the activity, 2) identify the risk factors, 3) assess the risk, 4) develop an enablement plan, 5) make a record and share your plan, 6) review

regularly. The risk enablement process comprises of risk management considerations which must be addressed in a logical sequence. As such, this sequence and their meaning are very relevant to investigating risk related decision making in this programme of research. The components of the risk enablement process will now be discussed in more detail.

The concept of 'value' in occupational therapy refers to the meaningfulness that is elicited from an activity or occupation. In this respect 'value' has a powerful utility in occupational therapy intervention and is multidimensional in how it encompasses and describes the positive aspects and its desired outcomes. Values develop over a lifespan, and they are rooted in our biological needs. Wilcock (2000) asserts that people are occupational beings, and that life is an educational experience where people respond to biological heritage as it is moulded by sociocultural values. From this perspective, 'values' can be viewed as a part of developmental growth, in that, they are derived from 'doing', 'being', 'belonging' and 'becoming' (Wilcock, 2006). Studies investigating happiness in activity in the late 20th century found value was connected to happiness and health, particularly, those activities that were socially valued (Argyle, 2001). Values can become strong lifelong beliefs which can be underpinned by our morality and subject to how we develop in societies influence of what is deemed right or wrong (Kielhofner, 2002).

Occupational needs, whether part of biological, social, cognitive, spiritual or religious beliefs, to name but a few, have attached values and these are individually conceived and make up our personal convictions (Kielhofner, 2002). Anything that impacts these

values, for example, disease, injury, disability and or the aging process, influences our needs and has the capacity to change our personal convictions (Kielhofner, 2002). Therefore, ‘values’ play a crucial role in our lives, they have shaped our perceptions of the world and are part of our self-actualisation, that being, the realisation and or fulfilment of our potential (Collins, 2007). Occupational therapists focus on the therapeutic value of an activity, and from a risk perspective they use activity analysis to ensure each step is executed as safely as possible. Decision relating to the value of an activity must be made collaboratively with the client to ensure that risk and value perceptions align.

Identifying the risk factors is the second step in the occupational therapy ‘risk enablement process’ (RCOT, 2017). Occupational therapists should look at every aspect of an activity to which they are responsible for to identify potential hazards that pose risk. Risk factors could be related to a person, occupation and the environment including any assistive equipment. Risk to a client can also come from organisations where systems and processes cause systemic failings and risk prone conditions. These are sometimes referred to as the latent risk factors of patient safety (Van Beuzekom et al., 2010). Additionally, occupational therapy offers a unique perspective of what might constitute as a risk factor in relation to occupational dysfunction. Fieldhouse (2000 p.212) contends ‘occupational risk factors may be understood as symptoms of the loss of harmony between lifestyle and the environment that humans evolved within, and which ensured the healthy continuation of all capacities.’

Assessing risk factors will also determine which are modifiable or non-modifiable. Modifiability is determined on whether the risk factor can be controlled. The concept of a modifiable risk factor can be relevant to many diseases, smoking can be viewed as a modifiable risk factors as reducing or stopping epitomises the control aspect of risk. Likewise, the modifiable risk factors in falls may include fear of falling, mobility limitations, poor ambulation patterns, impaired balance, visual impairments, poor reaction times and adverse reaction to medication. Whereas, age, family history (genetic inheritance) and ethnic background are non-modifiable. Risk factors are sometimes categorised as either intrinsic or extrinsic (Nazarko, 2015; RCOT 2020). From an occupational therapy perspective, intrinsic risk factors are those that directly relate to the person and, therefore, extrinsic risk factors are anything else, including the physical and natural environments (Woodland & Hobson, 2003).

Assessing risk can be done in a variety of ways, whether carried out as part of a condition specific assessment or as a general part of therapy. Initiating the occupational therapy process will help gather information to determine the risk factors to be assessed. It will in some cases also identify where risk is already being managed (RCOT, 2017). Risk factors are not static, but they dynamically change with a person's ability or inability, by this token, it is hard to define how thorough and far reaching a risk assessment should be (RCOT, 2017; Royal College of Psychiatrists, 2016). However, an occupational therapy risk assessment should consider the following, the physical and cognitive status of the individual, the environment, the chosen activity, the use or provision of rehabilitation/assistive equipment and the possible actions (purposeful or accidental) of other people (RCOT, 2017 p.9).

Mitigating risk for one person may cause a risk prone situation for another. Assistive equipment provision must be considered in relation to the risk it causes to carers and or family members as such equipment may pose an environmental hazard and or risk (RCOT, 2017). Assessing risk is a key component of the risk enablement process, from identifying what hazards are risk factors and judging their likelihood and potential harm is fundamental to planning how to mitigate them. This process also determines what controls can be put in place to reduce avoid or eliminate risk and this facilitates positive risk-taking (RCOT, 2017).

Developing an enablement plan considers what risk is appropriate to take in relation to the risk a service user is willing to take. It also involves looking at their strengths and weaknesses in the assessment to ensure risk can be balanced. It is important to keep the service users at the heart of the risk enablement plan, but it must also consider others involved in mitigating the risk and or caring for the service user (RCOT, 2017). The result must be that the service user and carers feel empowered to manage risk when appropriate and possible. Importantly, the risk enablement plan must include risk contingency planning if risk becomes a reality, and an accident occurs (RCOT, 2017).

Record keeping and sharing the risk enablement plan ensures all those involved are aware of decisions and actions in relation to the risk factors identified. Risk communication is vital to explain clinical and professional reasoning which specify what controls have been put in place, and why. Additionally, recording risk assessment is a mandatory requirement (COT, 2015 section 2.6) it also demonstrates compliance with health and safety requirements and duty of care responsibilities (RCOT, 2017). The aforementioned

nature of risk factors being dynamic and changeable emphasises the importance of regular review. This facilitates timely amendments can be made to ensure safety is maintained and the risk management controls are still relevant (RCOT, 2017).

1.4.4 Positive risk-taking

Previously it was discussed that evaluating and estimating risk is difficult and it is a subjective process which requires objectification and confidence in predicting likelihood and harm before positive risk-taking can be employed. However, there are many other considerations to positive risk-taking that may also impact the risk related decisions of occupational therapists and how readily they might employ such a strategy. This part of the chapter focuses on the challenges with employing positive risk-taking with older adults with complex needs, emphasising it often requires multifactorial consideration of a client's capacity, carer/family and stakeholder perspectives and reconciling competing ethical principles. Prior to this discussion, positive risk-taking will be defined.

Occupational therapists have the complicated task of tailoring occupational therapy intervention that both mitigates risk and facilitates risk taking activity (RCOT, 2017). Morgan (2004 p.18) defines positive risk-taking as '… weighing up the potential benefits and harms of exercising one choice of action over another. This means identifying the potential risks involved and developing plans and actions that reflect the positive potentials and stated priorities of the service user. It involves using available resources and support to achieve desired outcomes, and to minimise potential harmful outcomes.'

This definition provides there are many considerations in tailoring occupational therapy interventions that employ positive risk-taking which include factors that are intrinsic and extrinsic to the client.

Positive risk-taking is a complex risk strategy potentially invoking decisional factors which stem from the therapeutic relationship and outside influences. Previously, it has been highlighted that the emergence of intermediate care has been influenced by social, cultural, and political drivers. These drivers include diminishing NHS rehabilitative services, privatisation, and structural changes in the NHS, freeing up hospital beds, increased pressure on community and social care services, population changes with older adults living longer with complex needs and challenges to integrating intermediate care services. Moreover, older adults can be highly variable to rehabilitation owing to changeable levels of function. Problematic areas of practice involving blurred lines of roles and responsibilities, coupled with disjointed risk management systems (limiting effective risk communication) can all detract from establishing a safety culture and impact attitudes towards positive risk-taking.

The concept of positive risk-taking evolved in the 1990's as a practical response to engaging people experiencing severe and enduring mental health problems (Morgan & Campling, 2013). It is now a widely supported risk strategy in all occupational therapy practice settings as well as being recommended for intermediate care interventions (NICE, 2017; RCOT, 2017). Fundamentally, positive risk-taking empowers individuals to influence their own health, to push through the boundaries of disability and to increase everyday function and engagement with life. In reality, positive risk-taking is challenging

to employ, especially with older adults who have an inconsistent level of function causing uncertainties in their safety. It is essential in occupational therapy intermediate care intervention and employing it gets more challenging when the risk of harm is high.

Positive risk-taking in a therapeutic context involves recommendations which have mitigated risk to promote beneficial and appropriate risk taking interventions and these are tailored to promote health and wellbeing. Although therapeutic recommendations may represent professional risk, the risk taker pertains to the recipient of the therapy. Positive risk-taking is multifaceted and activities and occupations that people engage in can have positive and negative health outcomes (Wilcock, 2015). Risk is initiated in many aspects of life so that we can develop and make changes for ourselves (Morgan, 2004). We take risks to achieve our occupational goals which reflect our desires and choices so that we can exert and hold some control in our life course and destiny (Morgan, 2004; RCOT, 2017). However, risk is commonly reduced to harmful elements (Carson, 2008), subsequently, risk assessment is often only invoked when danger is present (Gallagher, 2013). Additionally, clinical competence as often associated with minimising and correctly predicting risk. Gallagher (2013) suggests that failing to engage with risk or working to risk limits with a reluctance to explore its boundaries to enhance a client's ability causes a multitude of missed therapeutic opportunities. Conversely, engaging with risk without preconceived limitations will enable people to challenge the confines of disability to increase everyday function and engagement with life. The caveat is that positive risk-taking decisions often involve accommodating multiple perspectives including carers/family and or key stakeholders (i.e., healthcare workers and health and social care professionals) and these perspectives may at times be conflictive.

Occupational therapists are required to make decisions about what is potentially harmful as part of their duty of care (COT, 2015). Their risk perceptions are internalised to form risk judgements before they are shared with those involved in the client's care. These judgments maybe challenged by carers or other proxy decision makers, especially where client risk taking discussions take on more of a protective element, potentially reducing the scope for positive risk-taking. Being overly protective can amount to being risk avoidant and such risk averse behaviours can nullify positive risk-taking or counteract its effectiveness. Such attitudes to risk may be more present where a client's behaviour is difficult to predict. Behaviours which demonstrate unpredictability can relate to psychological and or physical aspects of the person. Older adults are more susceptible to disease and disability which present physical and psychological challenges (Atwal et al., 2012) to positive risk-taking. Neurodegenerative disease is also more prevalent in older age groups, for instance, Alzheimer's disease (dementia) causing mental capacity limitations, notably, difficulties with short term (day to day) memory (McGuinness et al., 2010).

In cases where a client's decision making is questioned owing to limited or fluctuating capacity, being overly cautious can reduce a client's autonomy by not giving them the chance to make the decisions they are able to (Morgan, 2004). In this context, Moats (2007) asserts complexity occurs when attempting to maintain client centred values involving autonomy versus their ongoing safety. This can be a tenuous process between decision makers where there are different risk perceptions and opinions to assimilate.

Faulkner (2012) asserts, the language of risk is more often than not pre-determined by practitioners and that a paternalistic approach fails to acknowledge the rights of vulnerable people. How society treats vulnerable people can impact on how risks are perceived, managed, and communicated. McIntyre & Atwal (2005) assert that society seems to have a different perspective on risk and marginalise those that are beyond their paid employment years. Being treated differently because of your age can constitute ageism. In their healthcare ageism survey, Dobrowolska et al. (2017) found age discrimination in healthcare institutions was reported by 24 (30%) of older adult patients and witnessed by 47 (47%) student nurses surveyed. In this context, unhelpful preconceptions that focus only on the vulnerabilities in older adults can bias risk perception, detract from their capability, diminish autonomy promotion, and influence the propensity to employ positive risk-taking.

Health promoting occupations are overlooked and occupational aspirations become secondary to risk avoidance to avert any potential adversity or accountability (McIntyre & Atwal, 2005). There is a tendency to be overprotective and patronise older people in the name of risk management which is in turn viewed as an admirable objective (McIntyre & Atwal, 2005). This societal standpoint fails in many respects to recognise individual experience and potential, or link negative health outcomes to reduced occupational opportunity (McIntyre & Atwal, 2005). Failings of this nature are referred to as occupational deprivation, alienation, marginalisation, and imbalance within occupational science and are commonly grouped together in the concept of occupational justice (Whiteford & Hocking, 2012).

Hocking (2017 p.29) defines occupational justice as '…a powerful idea, bridging the gap between people's well-being and harmful social conditions that restrict what they can do and be.' Kristensen & Petersen (2016) assert, the loss of rights from an occupational justice perspective is now factoring into the professional reasoning of occupational therapists, notably, client centred practice and ethical reasoning. However, mitigating harmful social conditions may present occupational therapists with challenges they cannot meet or avoid, for instance, the shortage of care workers in social care cannot be controlled (AgeUK, 2021). This may pose as a barrier to positive risk-taking as support may be required to participate in those activities that could be considered high risk, it also places emphasis on the importance of positive risk-taking in this context.

Positive risk-taking and the management of risk in occupational therapy is subject to a health and social care culture which is both supportive of the concept and creates an environment for it to be practised (Morgan, 2004; RCOT, 2017). Likewise, the corporate approach to risk that an organisation takes overwhelmingly influences the practices of its workforce". (DOH, 2007 p.5). Where organisational risk factors have been identified, the risk they pose must factor into professional reasoning so they can be mitigated (DOH, 2009; RCOT, 2017). However, some organisational risk, operations and cultures may not be readily or easily mitigated. Morgan & Andrews (2016) assert that professional risk and organisational culture will still present barriers to decision making for many practitioners. This potentially results in risk averse decision making driven by organisational culture and or an individual's instinct of self-protection rather than person-centred working (Morgan & Andrews, 2016). The concept of risk has become synonymous with accountability, blame and 'covering your back' (Repper & Perkins,

2003). Carson (2008) suggests that while there is no law specifically defined in terms of risk, being complicit or putting someone at risk in a healthcare context relates to legal concepts of negligence and recklessness.

The barriers to positive risk-taking can include a lack of clear risk taking policy, or insufficient or poor information to interpret service philosophies before making risk decisions. It can also include a blame culture and a lack of training and support to unify multi-disciplinary teams in risk management (Morgan, 2004). Moreover, not sharing and reflecting on decision making under risk, not employing sensitivity and support methods of investigation if a risk decision goes wrong and not succumbing to solely persecuting those involved are all barriers to positive risk-taking (Morgan, 2004). Morgan & Andrews (2016) suggests facilitating positive risk-taking must include a combination of rights and values-based practice, focusing on a strengths approach, offers a practical and constructive way of implementing positive risk-taking.

In summary, there are links between the driving forces creating working cultures, the impact of the organisational practices and systems on its practitioners and these have the capacity to influence positive risk-taking decisions at a therapeutic level. One prominent barrier has been identified to be blame culture. In this context, working cultures and conditions have to be reconciled with complex client needs and this extends to the wishes and values that carers and family members express as part of a collaborative and supportive approach to positive risk-taking. These perspectives conflict with risk avoidant preferences that counteract positive risk-taking, and the benefits contained within occupational therapy interventions. Further barriers can occur when there are

insufficient risk policies and guidance, different care ideologies and priorities between decision makers and ethical dilemmas where one ethical principle is increased i.e., safety (non-maleficence) at the expense of another i.e., the right to self-govern (autonomy) and visa versa. These considerations are extrinsic and in addition to client factors relating to their level of functional and mental capacities and their values and needs in relation to tailoring occupational therapy interventions which employ positive risk-taking. As such, positive risk-taking is multifactorial with potentially many challenging decisional factors to reconcile before employing such a strategy in the context of occupational therapy intermediate care.

This part of the chapter has brought together several important considerations for this programme of research. This information will help inform how to investigate positive risk-taking including the identification of suitable methodologies and approaches to study such a complex risk strategy. It affirms that positive risk-taking is influence by societal forces, organisational culture, working practices, specific barriers, and a multitude of client considerations in older adult occupational therapy. However, there is a paucity of research that investigates risk perceptions of occupational therapists when making positive risk-taking recommendations in light of the specific pressures and barriers faced by them in intermediate care. As such, this emphasises a gap in knowledge and provides direction for this research programme.

In the next part of the chapter, the discussion focuses on how risk management is legislated and mandated and why a client's propensity to take risk is important in this context.

1.4.5 Rights and responsibilities of risk taking

In the previous part of the chapter, occupational justice was discussed as a concept which is relevant to health and social care provision, emphasising that social conditions that influence organisational cultures and practices can present the risk of harm to a person receiving care. Integral to achieving social conditions conducive with facilitating positive risk-taking from organisation to practitioner requires adherence to key legislation which seek to protect human rights, service users who lack mental capacity and or those who receive local authority care. In this context, it is important to understand what Government legislation is relevant and how the occupational therapy codes of practice mandate risk management. This will give further context to the potential decisional factors involved in positive risk-taking to inform this programme of research. This chapter introduces and discusses these topics in relation to reconciling risk management with 'rights' based care.

Occupational therapists have a personal, human, or moral response to risk which must be tempered and rationalised in weighing up the risk against the rights of their clients. More often than not, when the term 'rights' is used it refers to the Human Rights Act 1998 as protected under the European Convention of Human Rights (DOH, 2007). The legislation relevant to public authorities mandates all bodies carrying out functions of a public nature should not act incompatibly with these rights (DOH, 2007).

The right to health creates a legal obligation upon societies to ensure access to timely, acceptable, and affordable health care of appropriate quality and this includes ensuring equitable access to potable water, sanitation, food, housing, health-related information and education, and gender equality, these being significant determinants of health (WHO, 2022). To achieve these objectives resources must be maximised, health policy and programmes must prioritise those in most need whilst ensuring healthcare provision is without discrimination on the grounds of race, age, ethnicity, or any other status. Additionally, another feature of a rights-based approach emphasises the importance of participation of government and non-government organisations to be 'meaningfully' involved at all levels including, programming: assessment, analysis, planning, implementation, monitoring and evaluation.

A rights-based approach should be designed explicitly to improve the right to equitable health (WHO, 2022). Failure to incorporate a rights-based approach into decision making results in a paternalistic approach, with decisions that treat vulnerable people as being a source of risk first, and at risk second (Faulkner, 2012). Morgan & Andrews (2016) remind us, we all have rights in a civilized society; however, it is easy to deny some people freedoms of choice in decision making. This is problematic in health care provision and is compounded when an assessment is generalised rather than being specific (Morgan & Andrews, 2016).

As positive risk-taking involves balancing a person's autonomy (right to self-govern) with the potential harmful aspects in performing activities as part of occupational therapy intervention its success is dependent on a person's capacity to understand and remember

what is being asked of them. Morgan & Andrews (2016) assert, practitioners often do not think in terms of rights and, therefore, they can be overlooked and unintentionally violated. Another perspective is how rights are translated into policy and subsequently interpreted in practice. In this respect, Morgan & Andrews (2016) state, there are substantial challenges that require an agenda for change to support and educate a workforce to correctly interpret clients' rights and policy in relation to their roles.

The concept of 'rights' is complex, sometimes involving protecting the rights of health and social care workers and their service users at the same time. This is relevant to any actions where a service is withdrawn or not recommended on the grounds it is too dangerous for the health and social care workers to perform or support (DOH, 2007). Where a service user wants to engage in an activity which is deemed too dangerous and cannot be mitigated to a reasonable safe level is a problematic area which has moral and ethical overtones and implications for positive risk-taking.

The Royal College of Occupational Therapists official position is that if a risk assessment reveals there is a likelihood of significant harm in taking the risk, then an occupational therapist can choose not to support that activity or discontinue their service. However, mitigating the risk is still advised in order to make sure it is as safe as possible, even if you have recommended against taking the risk (RCOT, 2017). Additionally, whether a person has mental capacity is an important consideration. Those with capacity are free to engage with the activities they choose to do, regardless of the risk attached, they have the right to do so. Mental capacity legislation (Legislation.Gov.UK, 2005) provides that engaging in high risk or unwise activity is not necessarily an indication that there is a lack

of mental capacity as people are free to control and make their own decisions in life. Likewise, service users are free to refuse any intervention in the occupational therapy process (RCOT, 2017).

Where risk has been identified the best interest and wellbeing of the service user must prevail (COT, 2015 Section 2.3). This also extends to refusing any intervention in the occupational therapy process. This perspective would change for those without capacity; however, this should be on a decision per decision basis and proportional to the level of understanding of the service user about the intervention or risk involved (Morgan & Andrews, 2016; RCOT, 2017). Morgan & Andrews (2016 p.123) state, mental capacity is specific, not a generalised attribution to a person; so, a focus on a person's understanding of the choices and consequences should be related to a specific decision.

Mental capacity legislation (Legislation.Gov.UK, 2005) sets out the criteria for when a person is unable to make care decisions for themselves: -

- They are unable to understand information given to them
- They are unable to retain that information long enough to be able to make the decision
- They are unable to weigh up the information available to make the decision
- They are unable to communicate their decision, either by talking, sign language, muscle movement, blinking or squeezing a hand

An important aspect of this criteria is a lack of capacity must be demonstrated before decisions are made that override a client's autonomy where subsequent actions potentially go against their wishes (Croft, 2017). In the context of positive risk-taking in intermediate care interventions, these criteria are very relevant as there is a higher frequency of dementia in older people and it is linked to reduce mental capacity (Morgan & Andrews, 2016; NICE, 2017).

Mental capacity legislation (Legislation.Gov.UK, 2005) is relevant to many aspects of the Care Act (2014). The Care Act 2014 emphasises that people should decide upon their own care and support appropriate to their capacity to do so. Moreover, they should be engaged as fully as possible in all functions of assessing, planning and delivering their care (GOV.UK, 2014; Morgan & Andrews, 2016). The Care Act 2014 requires that services, including intermediate care, should consider how person-centred support is planned to promote individual wellbeing (NICE, 2017). This describes many potential areas where positive risk-taking is relevant as care related risk decisions should always be underpinned by safety versus autonomy considerations.

The Royal College of Occupational Therapists Code of Ethics and Professional Conduct guidance (COT, 2015 p.11) states risk management is an intrinsic part of governance and the provision of a quality service. This applies to whether the risk is associated to people, organisations, or the environment. Successful risk management can enable positive risk-taking with service users in a safe and appropriate way (COT, 2015). Risk assessment must precede all risk management strategies including positive risk-taking, the guidance mandates: -

> ‘You are responsible for assessing and managing the identified risks involved in providing care to your service users.’
>
> (COT, 2015 Section 2.5.2)

There is also emphasis placed on health and safety cooperation when service users are transferred between services. The importance of cooperation is also alluded to as a requirement in a working relationship between practitioners and employers to meet risk legislation and policy requirements (COT, 2015 Section 2.5.2 & 2.5.3). The guidance mandates occupational therapists must take reasonable care of their own health and safety and that of others who may be affected by what they do or don’t do. Moreover, occupational therapists are required to familiarise themselves with risk management legislation and policy relevant to their practice, this includes adhering to statutory risk management, health and safety, and moving and handling training to ensure it is kept up to date (COT, 2015 Section 2.5.1 & 2.5.4). Additionally, a written or electronic record of an occupational therapy risk enablement plan including the clinical reasoning supporting positive risk-taking interventions is a mandatory requirement (COT, 2015 Section 2.6).

In summary, a rights-based approach is important to occupational therapy intermediate care provision and positive risk-taking from an organisational level to a therapeutic level. Maintaining client ‘rights’ can be difficult where there are mental capacity issues limiting autonomous decision making. In this context, positive risk-taking can present an ethical dilemma which must be considered in relation to a person’s rights and the Mental

Capacity Act 2005 legislation. Considering, the complexity of limited and fluctuating mental capacity in relation to a person's rights, ethical practice and positive risk-taking decisions highlights it as a potential area of investigation for this programme of research.

1.5 Professional reasoning: is process being confused with content?

Positive risk-taking is multidimensional and can require the deliberation of many factors before it can be employed. This part of the chapter will focus on occupational therapy professional reasoning and how information is processed and used to make decisions including decisions pertaining to positive risk-taking. It will also highlight differences between novice and expert professional reasoning. This information is important to finding appropriate research methodologies and approaches to investigating positive risk-taking across different levels of occupational therapy experience.

Occupational therapists have a complex and challenging task of reasoning healthcare imperatives such as risk management policies, a client's rights, evidence base practice, accountability, and person-centred care. They act as moral and ethical agents and are faced with many ethical tensions within their duty of care to their clients. These challenges are often approached where support is minimal as the practice of professional autonomy has become the norm (Robertson, 2012).

Occupational therapists have often been viewed as problem solvers. In the 1980's, the term clinical reasoning became popular to describe the process of how a decision was

made, or how a clinical problem was solved (Schell & Schell, 2008). Robertson (2012) suggests the common steps of problem solving, those being, referral receipt, data collection, assessment, problem identification, planning, intervention, and evaluation, mirror the occupational therapy process.

Professional reasoning has superseded the term clinical reasoning in many areas of practice as it better reflects those not associated with a medical clinic (Schell & Schell, 2008) for the purposes of this thesis 'professional reasoning' will be used as it covers both perspectives. The process of professional reasoning is not straightforward as it involves assessing multiple areas that affect a person's occupational performance whilst determining the risk involved. This is balanced with the desires of the client and the constraints of the environment (Robertson, 2012). There are many definitions of professional reasoning but commonly in occupational therapy it is understood to be, "the process used by practitioners to plan, direct, perform and reflect on client care" (Schell & Schell, 2008 p.5). Roberts (1996b p.233) asserts "reasoning can be thought of as reflection on perceived information and it may or may not lead to a conclusion or some kind of action".

Harries & Harries (2001a) assert that in occupational therapy ethnographical and information processing approaches have been used to explain types of reasoning in context, yet these approaches appear to be limited in representing the holism of thinking itself. Assessment entails the sensing and defining of patients' problems and is accomplished through diagnosis. As a process, diagnosis involves the creation of a clinical image of the patient to support or discount further investigation in order to reach

a conclusion for intervening or not intervening (Rogers & Holm, 1991). Diagnostic reasoning is one of many types of reasoning methods used by occupational therapists, however, unlike the others it offers an explanation about how information is processed. How information is processed when problem solving is important to understand in relation to investigating risk perception.

Diagnostic reasoning shares elements of both deductive and inductive styles. Elstein et al., (1979 cited in Roberts, 1996b p.375) referred to this process as hypothetico-deductive reasoning. In combination of deductive and inductive methods, abductive reasoning theorises conclusions can be determined from the data that is available or from what you know, and this can be an iterative process. Abductive reasoning accepts that data from our observations may be incomplete or inaccurate. Moreover, abductive, and diagnostic reasoning helps determine what information is best suited to solve a problem by attending to the most relevant cues and hypotheses to produce an accurate clinical picture (Roberts, 1996a; b; Schell & Schell, 2008). Understanding how occupational therapists are likely to concentrate on relevant cues of information in relation to solving a problem which involves assessing risk is also an important consideration for studying risk perception in this research programme.

Roberts (1996b) studied the reasoning styles of 38 occupational therapists who wrote down their thoughts immediately after reading three referral letters. Some therapists were found to use hypothetico-deductive reasoning when they were faced with less familiar information. Conversely, those who were familiar with the information used rapid formulation, seemingly, using pattern recognition from heuristic and intuitive cognitions.

However, even some rapid formulators followed their assumptions with hypothetico-deductive reasoning. Roberts (1996b) suggests there are two prominent types of reasoning used by experts, rapid formulation, and hypothetico-deductive reasoning (diagnostic reasoning). Roberts (1996b) asserts the rapid formulation of problem solving is a component of expertise as the initial stages of hypothetico-deductive reasoning are bypassed and the problem is recognised instantly, in an apparently intuitive way. Robertson (2012) asserts that experts are adept at identifying relevant cues and acting upon them. In contrast, a novice who is faced with new and unfamiliar information may overlook its importance, this may indicate a novice is yet to develop memory schemas to recognise a set of cues. The danger here is useful and relevant information may get ignored or forgotten that would assist in determining a client's risk and an appropriate plan for occupational therapy. This supports why novices may be perceiving and assessing risks differently to that of experts and that their lack of experience in dealing with new and unfamiliar problems may make risk decisions less accurate by comparison. This is an important consideration to this research programme and supports studying risk perception across different levels of occupational therapy experience.

Strong et al. (1995) conducted an exploratory study into expert clinicians' and students' views of clinical reasoning in occupational therapy. Using nominal group techniques, it was found that the experts considered a wider range of factors when making clinical decisions than did the students. In the expert group these factors which were considered most important related to scientific and narrative reasoning styles which in part used hypothetico-deductive reasoning. This suggests the expert group aimed to gain an understanding by using general principles of diagnosis and how these factors impacted

the patient. Conversely, narrative, and pragmatic reasoning styles were identified to be the most prominent in the student group. The influence of pragmatic factors on treatment, such as resources, time constraints and other environmental factors were found to be most prominent in student decision making.

Rogers & Holm (1991) suggest there are two stages of how a problem is contextualised within diagnostic reasoning, problem sensing and problem defining. Rogers & Holm (1991) contend these stages are integral to occupational therapy diagnosis and part of creating a 'clinical image' that involves cue acquisition, hypothesis generation, cue interpretation, and hypothesis evaluation. Cues can be anything that relate to a person, occupation or environment, they prompt a therapist to consider a specific diagnosis or action (Schell & Schell, 2008). Diagnostic reasoning of cues incorporates judging risk factors in relation to occupational performance, therefore, it offers a model of reasoning which is conducive with risk assessment. An important element of risk assessment and diagnostic reasoning is that cues are objectified, as part of an explicit process in problem solving (Rogers & Holm, 1991). Following a diagnostic reasoning approach to designing a risk perception study whereby relevant cues could be used to determine differences in risk related decision making propensities at different levels of experience is an important consideration for the direction of this research programme.

Rogers & Holm (1991) assert that 'cue acquisition' is a selective process and differs for each individual therapist. Cues are identified within a field of sensory data, not all of which is considered, however, the data that is attended to can influence the hypotheses made in a therapeutic situation. Cues can be collected as a cursory process or become

more detailed to involve cue generation where one cue stimulates the search for another. An example of this is how referral information in a clinical situation can influence the cues a therapist looks for upon meeting the client (Robertson, 2012; Rogers & Holm, 1991).

Cues are typically stored in working memory but can stimulate knowledge from long term memory. There can be limitations on how many are stored, Herbert (1974) suggests five to seven chunks of data can be stored in working memory at any one time. This is commonly circumvented by using memory aids like protocol forms or cognitive methods to economically cluster the cues together (Rogers & Holm, 1991). Cues, whether considered singularly or in clusters can be indications of occupational dysfunction and some may have more weight than others in creating the therapist's initial picture of their client (Robertson, 2012). This is important to this programme of research and emphasises studying risk perception must involve using relevant cues of information that reflect occupational therapy intermediate care provision. As such, establishing the most relevant cues relating to intermediate care risks must be one of the first stages of this research programme. Identify and assessing the cues in an occupational therapy context can help mitigate risks and determine the appropriateness of positive risk-taking. This kind of decision making requires considering and discounting lots of information and is subject to how information is stored in a therapists short and long-term memory. This filtration of information is also important to understand in relation to studying risk perceptions in this programme of research and this will be discussed next.

The formation of an initial picture helps early hypothesis generation which is normally based on very limiting and early data. This process is in contrast to creating a holistic picture, which may become erroneous and adversely influence the direction of therapy. However, Rogers & Holm (1991) suggest in diagnostic reasoning early hypotheses serve as critical cognitive data management functions. The early generation of ideas can direct the search for critical cues and is largely done to support a hypothesis rather than rejecting it. Newly acquired cues are organised around the hypothesis, thus, this process assists cognitive data management by cue organisation (Rogers & Holm, 1991). As such, the collection of data formed in cue organisation and the specific hypothesis they relate to, can be accessed from our long-term memories more efficiently. In addition, cues are grouped in terms of their relevance to a skill or function and can be downgraded if they do not contribute to the emerging occupational picture. This process is referred to by Rogers & Holm (1991) as 'cue interpretation'. Diagnostic accuracy improves as cue interpretation becomes more accurate and cue acquisition becomes more thorough (Rogers & Holm, 1991). At some point this process stops and the evidence is weighed up in an attempt to form a diagnostic conclusion. This process is referred to hypothesis evaluation. This may involve validating the cues and or nullifying any competing hypotheses in a process of weighing up the pros and cons. The significance of the cues and hypotheses, rejected or not, represents potentially useful future data and is stored in our long-term memory (Robertson, 2012).

Long term memories do not have the same limitations as our working memory. Rogers & Holm (1991) contend that the long-term memory has a potential limitless amount of storage and that experienced therapists have a cerebral library where hypotheses have

been proved or disproved. Those that relate to each other will be cross referenced and aggregated in the course of practice. Ultimately, this means that experienced therapists can readily and efficiently locate and retrieve a volume of knowledge applicable to their client. Robertson (2012) refers to this as a triggering of hypotheses and hunches about what problems need to be addressed or what might need further investigation.

A therapist's perception and judgement cannot be considered completely impartial. The perceived salience of the cues is influenced by characteristics specific to the individual therapist, such as their past experience, knowledge, values and methods of processing information (Robertson, 2012). These characteristics direct attention to cues and factors which are integrated into personal schemas. Piaget (1952 p.7) defines a schema as: "a cohesive, repeatable action sequence possessing component actions that are tightly interconnected and governed by a core meaning". Robertson (2012) refers to a schema as a form of knowledge networked in our long-term memory which includes a set of assumptions idiosyncratic in manner. Roberts (1996b) equates schemas to pattern recognition and the process of perceiving and storing related information. Cues (stimulus) invoke pattern recognition which have been accumulated by therapists from their experiences and these form clinical pictures and assumptions. Hooper (2008) asserts that therapists' assumptions shape their practice and perpetually influence the cues and factors they focus on, which raises questions about the accuracy of their reasoning.

Important to studying risk perception in this research programme is that occupational therapists have developed to recognise cues in the course of their career and applied weight and importance to them based on shared values and multiple interactions with

clients, colleagues and their working environments. The next part of the discussion will focus on how diagnostic reasoning relates to other reasoning styles and examine its limitations in relation to explaining unconscious and implicit cognitive processes, i.e., intuitive reasoning. Understanding that risk perceptions do involve conscious and unconscious cognitive processes in relation to making decisions is important to this programme of research. It supports that investigating these imperatives is likely to be more achievable by analysing the decision (outcome) rather than trying to investigate the complex cognitive processes and subjective interpretations of therapists (Harries & Harries, 2001a; b).

Fleming (1991) suggests that therapists have a 'three track mind' and primarily use procedural, interactive and conditional reasoning styles. Cues are generated during 'procedural reasoning' in order to invoke regimes and routines known to be effective in hypothesis generation and to solve therapy related problems (Robertson, 2012). Likewise, using the information and cues gained from client verbal and non-verbal communication as part of 'interactive reasoning' helps this process. In 'conditional reasoning' therapists use their knowledge of a client's condition to look for cues and evaluate their hypotheses from what they observe and already know. However, conditional reasoning is multi-dimensional as it relies on the therapists understanding of the condition and beliefs in how it might affect the client. Roberts (1996) assert, the 'three-track' model may lead to misinterpretation and suggests that it does not describe a cognitive process, instead, it focuses on explaining what occupational therapists think about as they practice. However, it is easy to apply diagnostic reasoning theory to each of the reasoning styles in the model.

Diagnostic reasoning is an important aspect of both pragmatic and narrative reasoning styles (Robertson, 2012). Pragmatic reasoning is generally not focused on the client, instead it describes the realities and limitations of practice, of which pose different cues to be considered. Schell & Schell (2008) describe pragmatic reasoning as having a personal and practice dimension which influence professional reasoning. Within the personal dimension there are cognitive boundaries called a 'problem space' and these are set by the problem solver (therapist) which shapes and constrains what is considered (Kassirer & Kopelman, 1991). A therapist's knowledge combined with task awareness and domain specific knowledge impacts on the problem space. This can shape perceptions and influence diagnostic reasoning (Robertson, 2012). Additionally, organisational considerations and limitations can heavily impact therapy, however, it is a therapist's understanding of them and ability to manipulate them which is pivotal to effective decision making. Robertson (2012) views this as adding to the personal schemas of occupational therapists which will be important to future hypothesis generation.

Narrative reasoning focuses on the client. It is atemporal in nature and therefore it can contextualise a client's story in past, present and future perspectives (Mattingly, 1991). This helps a therapist appreciate the unfolding narrative, which can facilitate the identification of cues and the formation of hypotheses relevant to the client's narrative (Robertson, 2012). An advantage of narrative reasoning is that it can be constructed in collaboration with the client, and it can be adapted to a change in a client's status, unlike a rigid generic approach (Mattingly, 1991). Constructing a future narrative helps hypothesis generation in the future if the predicted client status becomes a reality (Robertson, 2012).

The diagnostic reasoning model is an explicit cognitive process and, therefore, does not fit neatly into the ideas of heuristics, intuition and quasi experimental approaches (Rogers & Holm, 1991; Tversky & Kahneman, 1974). Hammond & Brehmer (1973) suggest such reasoning processes can be considered as a 'Cognitive Continuum Theory' that spans between intuitive (unconscious cognitive activity) to more analytic theories of cognitive reasoning. Cognitive continuum theory has become a prominent concept in understanding management judgement and decision making (Hammond, 1996, 2000). Intuitive thought also factors into Dreyfus & Dreyfus (1980) skill acquisition model. Their model explains the process of development from novice to expert proficiency.

A novice can recognise cues, but these will be 'context free', their knowledge is propositional and not tacit, and they have a 'non-situational' level of experience. Therefore, a novice would require monitoring, either by self-observation or instructional feedback, so as to improve and develop expertise (Dreyfus & Dreyfus, 1980; Robertson, 2012). Harries & Gilhooly (2011) used expert occupational therapists' referral prioritisation policies, derived from judgement analysis to train novices in the skill of referral prioritisation and found improved novice rating scores, improved consistency on repeat referrals and higher group agreement when matched with expert ratings.

In the context of assessing risk to employ positive risk-taking, failing to recognise risk factors can lead to unsafe risk-taking placing a client at the risk of harm. Experts have developed skills which narrow the margins for such mistakes and this knowledge is beneficial to novices developing their risk management skills. Experts are well practised in their field and can operate independent of procedures and memory aids on the basis of

their experience having acquired a broad knowledge and understanding. An expert has collated a vast number of experiences and has previous ‘situational’ knowledge and, as such, this can immediately invoke an intuitively appropriate action (Dreyfus & Dreyfus, 1980).

There are multiple modes of cognition in judgment and decision making and quasi-rationality describes a combination and middle ground between intuitive and analytical thought (Dhami & Thomson, 2012). Dhami & Thomson (2012) assert quasi-rationality is the prevalent mode in management judgement and is contingent on the correspondence between task properties and cognitive mode. Tasks vary in their ability to induce intuition, quasi-rationality, or analytical cognition and this can influence performance (Dhami & Thomson, 2012). Additionally, experience determines what cognitive processes are used; experts are more likely to show intuitive reasoning strategies in the quick formation of pattern recognition from a set of familiar cues. Conversely, in a less practiced task or in the identification of unfamiliar cues there is a tendency to use analytical reasoning. It is clear experience is a key factor to how reasoning is performed (Elstein et al., 1990; Harries & Harries, 2001a; Roberts, 1996a).

Important to this programme of research is that occupational therapy practitioners may be unaware of their own cognitive processes when making decisions at an intuitive level. In this context, the principle of judgment analysis, that being, investigating judgments only requires the decision maker to make judgements as they normally would, offers an approach to studying risk perception. Moreover, such an approach is focused on the outcome of the decision and not how it was cognitively formed. Put differently, there is

no requirement for the participant to access the processing stage or to fully understand it (Harries & Harries, 2001b). In the context of studying risk this is an important finding as it would be futile to attempt to investigate unconscious thought processes (intuition) and the multitude of previous experiences that have influence a subjective assessment of a risk.

In summary, positive risk-taking is likely to involve a broad scope of factors which vary in levels of importance to an individual's subjective assessment. This part of the chapter has explored how these factors are operationalised in professional reasoning. It contends that all information regardless of reasoning style is processed as part of diagnostic reasoning with a cognitive continuum of experience dictating levels of intuition and analytical processes. In this context, diagnostic reasoning involves stages where cues of information (factors) are identified, searched for and used together to help form a clinical picture where client related hypotheses (potential interventions) can be tested, retested or discounted at a cognitive level and in a problem-solving context. This is vitally important to understand how factors pertaining to positive risk-taking might be identified, organised, given decisional weight, or discounted when employed as part of an occupational therapy intervention. Moreover, it suggests expertise is an important consideration in this process and there are potential limitations to identifying and managing risk factors for those who lack experience. In the context of this programme of research, this knowledge will inform the development of research methods and data collection instruments to investigate positive risk-taking at different levels of experience.

1.6 Chapter summary

This chapter has provided a background of risk in occupational therapy intermediate care and emphasised that positive risk-taking is multidimensional with many different factors to consider at a therapeutic level. Intermediate care has been subjected to social conditions and driving forces which have shaped its service, issues with its integration and definability. This has shaped working practice and cultures where day to day pressures and demands on its service have challenged a collaborative approach to patient safety. Moreover, there are barriers to positive risk-taking including systemic organisational risk, blame culture and a lack of role clarity to name a few. This chapter has included discussion related to the complexity of older adult occupational therapy, risk, rights-based care, risk management and the differences between experts and novices risk perceptions and their professional reasoning. Moreover, it has highlighted that positive risk-taking can be counteracted when decision makers are risk avoidant. These decisions become more complex when a person receiving occupational therapy has limited mental capacity to make their own decisions. This in turn can invoke complex ethical dilemmas that challenge the reconciliation of ethical principles, notably, non-maleficence (safety) with autonomy.

Furthermore, this chapter has highlighted many aspects of practice which would make employing positive risk-taking challenging, especially to those who are new to occupational therapy in their first role or are occupational therapy students on fieldwork placements as part of a pre-registration course. Positive risk-taking is endorsed by the Royal College of Occupational Therapists (RCOT, 2017) and by the National Institute for Health and Care Excellence for use in intermediate care provision (NICE, 2017). Whilst this guidance alludes to positive risk-taking as a recommended risk strategy and essential

to a service users progress (RCOT, 2017), there is lack of empirical study to support such claims.

1.7 Rationale for a scoping review

In this closing part of the chapter, this broad review of the literature will be discussed in relation to how it has informed the next stage of investigation.

This first chapter was researched using a diverse amount of literature covering relevant topics related to employing positive risk-taking, occupational therapy and intermediate care. It is apparent there are a large amount of separate literatures in each area, yet there is a lack of research which bring these areas together. As a next step in this research programme, it is important to bring occupational therapy, intermediate care, and risk together to map the available literature.

A formal literature review using systematic methods is required in order to identify the literature which has addressed risk in occupational therapy intermediate care. This chapter has found no primary research in which to base a focused and meticulous review to identify, select and critically appraise occupational therapists risk management approaches i.e., the effectiveness of positive risk-taking in practice. As such, this ruled out a systematic review in this context.

There are diverse pockets of literature pertaining to risk in occupational therapy intermediate care with no explicit focus on positive risk-taking. The scoping review provided a means to map and pool the available literature on the common areas of risk and the nature of these risks and how they are managed (i.e., positive risk-taking) in occupational therapy intermediate care provision. Moreover, since risk management and positive risk-taking guidance was published in 2017 (NICE, 2017; RCOT, 2017) scoping review methodology was appropriate to identify emerging research and literature in this context.

In summary, the scoping review provided a means to map the broad range of evidence, identify gaps in knowledge, clarify key concepts, and report on the types of evidence informing risk management and positive risk-taking in practice. A scoping review was undertaken as the next stage of this programme of research, and this is presented in Chapter 2.

Chapter Two

What are the common areas of risk and their characteristics found in intermediate care from an occupational therapy perspective? A scoping review.

2.1 Introduction

In the previous chapter a broad review of the literature pertaining to occupational therapy, intermediate care and risk was conducted. Reviewing these literatures separately has identified how decisional factors relating to positive risk-taking are processed, how such processes are likely to be affected by experience and the driving influences of society which shape organisational culture and occupational therapy intermediate care services. Factors that can impact decision making can be multitudinous and be a result of a person's conscious, and unconscious cognitive processes. Additionally, a person's previous experience is likely to change the degree to which they employ intuition and analytical reasoning to problem solve in a positive risk-taking context. An important consideration in this respect of how this might be researched are the principles of judgment analysis, especially, in that it focuses on explaining the relationship between the decisions and the available information (Harries & Harries, 2001).

Whilst the previous chapter highlighted many important considerations, there was a lack of literature that offered an empirical study of the types of risks associated with occupational therapy intermediate care, the nature of these risks and how they are managed and strategised. From this perspective it was hard to focus a review on any explicit uses of risk management in occupational therapy intermediate care. Moreover, it was not appropriate to conduct a systematic review of the literature to provide any definitive answer to the effectiveness of risk management in this context, as few interventional studies have been conducted. However, it was apparent that there was a diverse amount of literature pertaining to the risks in occupational therapy intermediate

care which had not previously been reviewed. Reviewing this literature would elucidate the type and extent of these risks and the management strategies used to mitigate them to promote safety.

A next logical step in this research programme was to pool the available literature using systematic methods to identify the extent, nature, and types of research which has focused on all three core components of this investigation: occupational therapy, and intermediate care, and risk. Thus, a scoping review methodology was appropriate. This would identify areas where all three components have been studied together and areas for further research.

In this chapter, the scoping review's philosophical perspectives, methodology, its aims, methods, and its findings will be presented and discussed. Additionally, this chapter will highlight the importance of these findings in relation to how they have informed and influenced the direction of this research programme and at the end of this chapter the aims and objectives for Phase 2 and Phase 3 will be presented.

2.2 Methodology

The ontological and epistemology aspects that underpin this research programme in relation to investigating risk and the methodologies used in Phase 2 and Phase 3 will be discussed in the next chapter. From an ontological perspective, scoping reviews have a grounding in critical realism, that being, they are concerned with accruing and

objectifying knowledge about a real phenomenon (or phenomena) that exists in a body of literature whilst allowing for different methodological perspectives (Arksey & O'Malley, 2005; Levac et al., 2010; Munn et al., 2018). In this respect the phenomenon of risk exists as an independent entity which is researchable as a real and inevitable part of occupational therapy provision. Moreover, scoping reviews are built on the epistemological premise of discovering truth and knowledge using scientific method (Arksey & O'Malley, 2005). In this context, every researcher constructs a research question or study based on a particular epistemology; it is the foundation upon which the researcher decides what kind of knowledge is possible, adequate, and legitimate. This perspective denotes subjectivist epistemology (Crotty, 1998). However, to ensure the scoping literature is reviewed comprehensively an interactive and reflexive approach involving the researcher (student) and the supervision team was adopted throughout.

Scoping reviews are commonly undertaken to discover the extent, range, and nature of research activity and to determine the value of undertaking a full systematic review (Munn et al., 2018). However, the scoping review purpose has evolved to include, concept and policy mapping, stakeholder consultation, clarification of definitions and concepts, and to interpret issues for further research and development (Arksey & O'Malley, 2005; Levac et al., 2010). Another consideration before undertaking a scoping review is whether to assess the methodological quality of the included studies. Brien et al. (2010) and Grant & Booth (2009) contend that the methodological exclusion of a quality assessment makes scoping reviews challenging to interpret and potentially decrease their uptake into policy and practice. Levac et al. (2010) suggest that lack of methodological clarity and definition of a scoping review has hindered the development of a bespoke critical appraisal tool as by way of a solution to the quality assessment critique.

The lack of quality assessment is seen by Khalil et al. (2016) as part of the scoping review methodology and, therefore, not absent by intention, as scoping reviews are there to gather many types of knowledge and evidence. This variation of information can assist in the clarification of definitions, interpretation of complex phenomena and or when attempting to gain an understanding of emerging concepts (Khalil et al., 2016). The inference is that quality deficits should not exclude a study from review or lessen its impact in answering the scoping review question. Levac et al. (2010) suggest there should be some minimum level of quality analysis in scoping review methodology. Pham et al. (2014) found in their study of scoping reviews and the methods employed, that quality assessment was performed in 76 (22.38%) studies of the 344 reviewed. The British Journal of Occupational Therapy (BJOT) position on quality appraisal in scoping review methodology is stated by Unsworth (2020 p.282) as, '…we normally expect that some form of quality review of these articles is also included. Although inclusion of a critical appraisal is not documented in scoping review methodologies.' This was an important consideration and influenced the decision to include a quality assessment in this scoping review. The rationale being that the study's findings would be enhanced and elucidate deficits in quality that could be addressed by future occupational therapy research.

Mays et al. (2001) assert that the methodological framework of a scoping review should be one that is consistent with systematic review, thereby, ensuring the methods used throughout are conducted in a rigorous and transparent way. The methods should be documented sufficiently so that the study is replicable by others. Ultimately, employing systematic methods will increase the reliability of the findings, and redress any critique of methodological rigour (Mays et al., 2001).

In 2005, Arksey & O'Malley proposed a methodological framework for conducting a scoping review. This guidance is now widely accepted as the standard for scoping review completion and dissemination. The stages of the framework are, 1) identifying the research question, 2) identifying relevant studies, 3) study selection, 4) charting the data, 5) collating, summarizing, and reporting the results. These stages were reinforced and in some cases enhanced by Levac et al. (2010).

Using Arksey & O'Malley's five stages, Levac et al. (2010) suggested the following enhancements, to clarify and link the purpose and research question, to consider the feasibility with breadth and comprehensiveness of the scoping process, and to use an iterative team approach to selecting studies and extracting data. Moreover, in the data analysis and evaluation of the findings, they suggested incorporating a numerical summary and qualitative thematic analysis and to link the implications of the study's findings for policy, practice, and future research (Peters et al., 2015 p.9; Levac et al., 2010). Additionally, Levac et al. (2010) view stakeholder consultation as optional and recommended further discussion to establish a process for quality assessment within scoping review methodology. These suggestions were important considerations in planning the scoping review. The research question and scoping review design would be developed using an iterative process between the researcher (student) and the supervisory team. Likewise, the recommendation to use a numerical summary and thematic analysis were incorporated into the scoping review data analysis plan. The focus of the scoping review was on empirical studies and, therefore, stakeholder consultation was not sought.

Arksey & O'Malley (2005) and Levac et al. (2010) scoping review framework and guidance features in the Joanna Briggs 'Manual for Evidence Synthesis Chapter 11 – Scoping Reviews', which was used to develop the scoping review protocol for this research programme (Peters et al., 2015). Arksey & O'Malley (2005) assert there is a growth in literature reviews which has resulted in a plethora of terminology to describe approaches, however, despite their differences they share common characteristics, those being, collecting, evaluating, and presenting the available research evidence. Joanna Briggs Institute (2020) assert there are several reasons a scoping review would be undertaken, these are: -

- As a precursor to a systematic review
- To identify the types of available evidence in a given field
- To identify and analyse knowledge gaps
- To clarify key concepts/ definitions in the literature
- To examine how research is conducted on a certain topic or field
- To identify key characteristics or factors related to a concept

In this study a pre-preparatory investigation of the types of literature and evidence available dictated the style of literature review required as well as influencing the review question and aims. The catalyst for conducting a scoping review was twofold, first, there appeared to be very limited literature to form a precise research question in relation to an occupational therapy intermediate care intervention involving risk management. Related to this, the second reason was that there appeared to be a lack of empirical studies in which to base a systematic review. Systematic reviews are designed to identify the

evidence from many studies into actionable insights, however, this is only possible when there is enough evidence to warrant such a review (Joanna Briggs Institute, 2020). A clear area of study (actionable insight) pertaining to positive risk-taking in occupational therapy intermediate care was not found. In this context, a scoping review provided a systematic and broader purview of the literature available in which to gain insight to inform the direction of this research programme.

The broad review of literature in Chapter 1, confirmed a lack of empirical study that brought occupational therapy intermediate care and risk together and this was reflected in the type, quality, and quantity of literature that supports occupational therapy and intermediate care risk management policies and guidance (NICE, 2017; RCOT, 2017). The type, prevalence and nature of the risks encountered by intermediate care occupational therapists remain largely unknown. This gap in knowledge rules out a systematic review, emphasises a need to elucidate the available evidence to examine the research conducted and poses an opportunity to identify characteristics and to clarify concepts in the context of occupational therapy intermediate care risks (Joanna Briggs Institute, 2020).

The scoping review purpose was to explore the breadth and extent of the literature and to map and summarize the evidence. Focusing on the types, prevalence and characteristics of the risks encountered by occupational therapists in intermediate care provision was an important focus. In this part of the chapter, the scoping review process will be presented in relation to its methods used to produce a unique set of results which in turn will be discussed.

2.3 Aims

The aims of this scoping review were threefold, to:

1. Identify the common areas of risk in intermediate care from an occupational therapy perspective.
2. To provide insight into these common areas of risk (risk domains) by establishing their volume and scope from the available research.
3. To identify the nature and characteristics of the risks in the research reviewed.

2.4 Method

A scoping review was conducted in order to meet the study aims and to map the key concepts in this area, including the main types and sources of evidence available (Arksey & O'Malley, 2005). Additionally, the scoping review method will be outlined in accordance with the headings set by Arksey & O'Malley (2005).

2.4.1 Identifying the research question

The research question was developed by preliminary database searching (CINAHL and MEDLINE) and an initial review of relevant literature. This process was instrumental in

providing the scoping review direction. It also helped with an initial understanding of the breadth and type of evidence available and where such evidence could be electronically located. Northumbria University's library was used to identify the electronic resources and the most appropriate databases (CINAHL, PUBMED, AMED and MEDLINE) in relation to the topics under investigation. The results from these initial searches revealed limited empirical research on risk, risk related decision making and positive risk-taking in occupational therapy intermediate care. These preliminary findings were also discussed with the research supervisors in order to construct the research question. This was an iterative process of refinement and improvement before the research question was formulated. As a result of this pre-preparatory activity the research question was identified as: What are the common areas of risk and their characteristics found in intermediate care from an occupational therapy perspective?

2.4.2 Identifying the relevant literature

A systematic search using the databases CINAHL, PUBMED, AMED and MEDLINE was conducted in December 2019. A three-stage search strategy was implemented, and regular team meetings were held to develop a search protocol. This included an initial search using keywords in the titles and abstracts in the retrieved records, a second stage to search the databases using the same identified keywords and a third stage to screen the reference lists of the included studies (Joanna Briggs Institute, 2020). Searches were not restricted by date, publication type or by non-peer review and non-English language studies were included.

Standardised systematic search strategies facilitate rigor in research (Cooke et al., 2012). This scoping review initially used a search strategy, using, sample, phenomenon of interest, design, evaluation, and research type (SPIDER) (Cooke et al., 2012). To achieve a balance between sensitivity and specificity a search string was created using the sample, that being, intermediate care occupational therapy and derivatives of risk as the phenomenon of interest in order to ensure all possible articles were retrieved during the database searches. In this context, searching for articles in relation to their design, methods of evaluation, and research type were not included. Another consideration was the use of the National Library of Medicine's Medical Subject Headings (MeSH) to increase the efficiency and preciseness of literature searching. Only a few descriptors were found relating to intermediate care mostly of which related to nursing. The subcategories of occupational therapy and risk management were not indexed in relation to intermediate care and, therefore, MeSH index searching was not used for this review. Instead, free text terms were more appropriate to ensure that no relevant articles were missed.

A search string was created using the divisions and variations of occupational therapy, risk, and intermediate care, see Table 1. Boolean operators, truncation, wild card, and proximity features were adjusted when necessary for each search, according to the database features and requirements.

Table 1. Search terms

No. of terms used	Search techniques
Occupational Therapy (n=1)	Occupational Therap*
	AND
Risk (n=11)	risk* OR threat* OR harm* OR hazard* OR danger* OR endanger* OR safe* OR accident* OR expos*OR uncertain* OR vulnerab*
	AND
Intermediate Care (n= 23)	intermediate care OR reablement OR re-ablement OR home* OR bed* OR rehab* OR comm* OR restor* OR integrat* OR crisis* OR rapid* OR satellite W2 team OR inreach OR in-reach OR safe W2 haven OR mobile W2 rehabilitation OR recuperat* OR transitional W2 care OR three W2 tier OR emergency W3 team OR emergency W3 teams OR evercare OR discharge*
W2 & W3 = word proximity to adjacent word	

2.4.3 Inclusion criteria and study selection

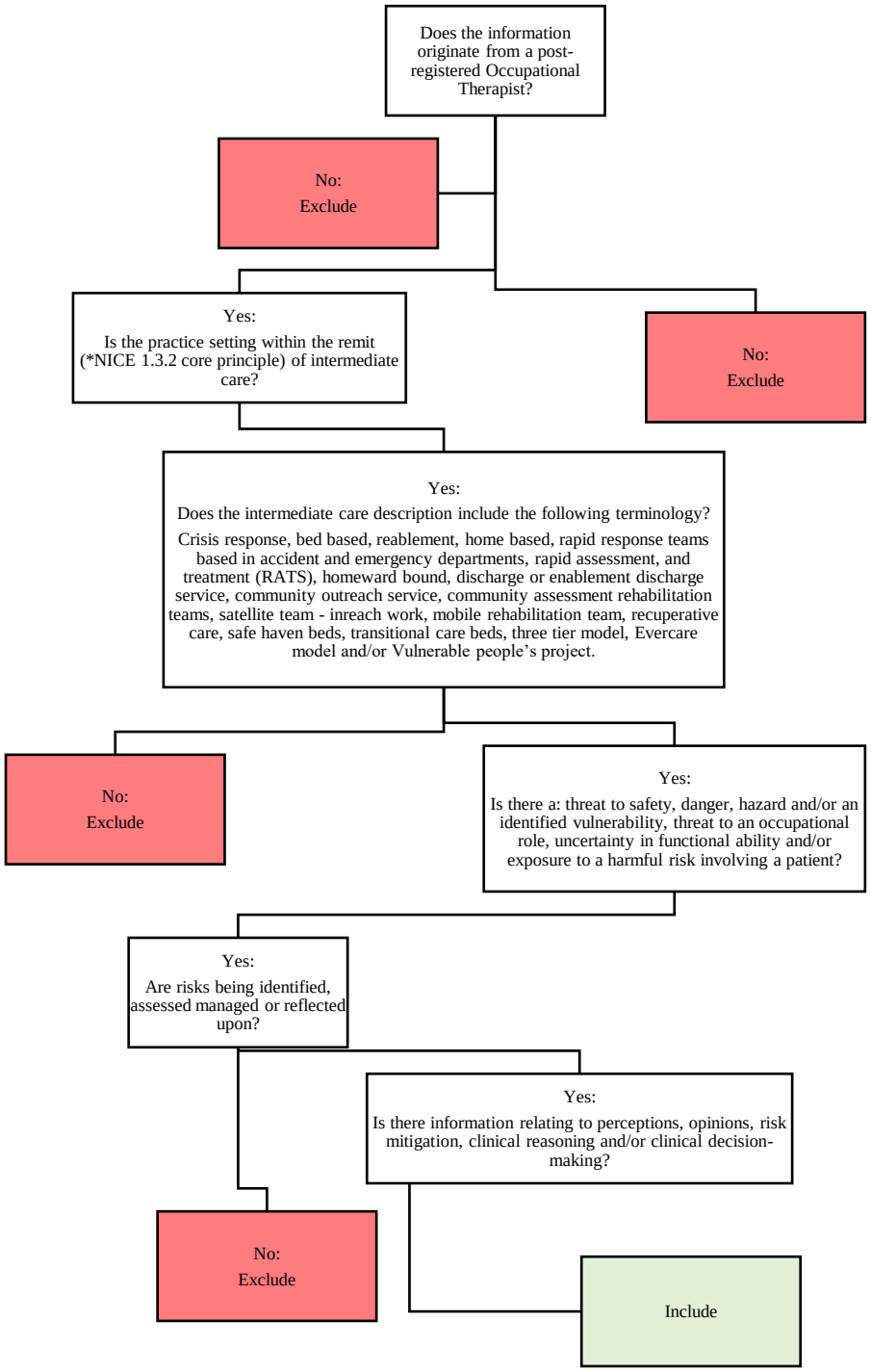
All records identified from the databases were uploaded to EndNote X9 and duplicates were removed. To be included, articles must have originated from at least one post-registered occupational therapists' perspective, be within the remit and/or definition of intermediate care and include a component of risk. These perspectives included clinical and professional reasoning/decision making, opinions, perceptions, and reflections. The NICE (2017) core guidelines, the National Audit of Intermediate Care (NAIC, 2019) and

Grant et al. (2007) provided intermediate care definitions. Risk terminology was identified in the Royal College of Occupational Therapists, 'Embracing risk, Enabling choice'; Department of Health's, 'Best Practice in Managing Risk' and 'Independence, choice and risk: a guide to best practice in supported decision making' guidance (DOH, 2007, 2009; RCOT, 2017).

A decision tree was developed for the purposes of applying criterion, as shown in Figure 1. The principal supervisor acted as a second reviewer screening studies in duplicate and the second supervisor provided guidance in relation to the review findings. Duplicate EndNote files were created to facilitate the independent screening of the titles and abstracts. The results from each of the reviewers' screening were combined into one EndNote file and the first reviewer completed a full text review of the studies put forward from the 'title and abstract' stage. Team meetings were held between the first and second reviewers to resolve screening discrepancies. Three areas of exclusion were applied, these were, the practice setting was not intermediate care, the information (results) did not originate from an occupational therapist or relate to a risk prone area in intermediate care provision, as shown in Figure 2. The studies that were subject to screening discrepancies and/or required further review for inclusion or exclusion were screened by full text independently before agreeing. Studies that did not meet these criteria or were associated solely with primary acute care discharge were excluded; however, studies that did not specify the exact discharge setting and/or included both acute care and rehabilitation occupational therapy perspectives were included.

Studies were included where occupational therapists were part of multi-professional groups of participants. Studies from the perspective of occupational therapy assistants or students were only included where all the other inclusion criteria had been met. Additionally, studies were not excluded based on whether a person had a particular condition, such as stroke or dementia and/or their particular circumstances, for instance, prison, temporary or residential accommodation, as per section 1.3.2 of the NICE (2017) intermediate care and reablement core principles.

Figure 1. Screening decision tree.



2.4.4 Assessment of methodological quality

An assessment of the quality of the included articles was conducted for this scoping review. The primary reason for this is that a scoping review is often employed to establish research gaps in existing literature, yet conclusions about the nature and extent of those gaps cannot be assessed with any certainty if the quality of the evidence is not assessed (Arksey & O'Malley, 2005; Khalil et al., 2016; Levac et al., 2010). Additionally, the inclusion of a quality appraisal is a preferred approach from the perspective of the British Journal of Occupational Therapy (BJOT) (Unsworth, 2020). The rationale for this is that a scoping review can map a relatively small number of articles in a topic area and a large amount of articles in another. A quality of these areas of evidence will give the reader a clearer picture of the priority for future research (Unsworth, 2020). These were important considerations that influenced the decision to include a quality assessment, ultimately, this was seen to add rigour to the scoping review findings.

An assessment of the methodological quality of included studies was completed in accordance with the recommendation from the British Journal of Occupational Therapy (BJOT). For the qualitative and quantitative studies this was conducted using the McMaster University critical review tools (Law et al., 1998, Letts et al., 2007). For the other study designs, the mixed methods and Delphi study were assessed using this critical review criteria for their qualitative and quantitative methods and critical appraisal guidance from Aveyard (2019) was used in relation to critiquing the literature reviews included in this study. This was completed for all included studies by the researcher (student). Eight studies (32%) were selected randomly and screened independently by the

students' primary supervisor to confirm the accuracy of their appraisal. Appraisal discrepancies were discussed during the student's supervisory meetings, whilst there was a high level of agreement in most areas the student rechecked areas relating to the reporting of statistical significance in all quantitative studies and the reporting of the decision trail and four components of trustworthiness in all qualitative studies. Surveys which yielded quantitative and qualitative data were assessed using the quantitative tool. Assessment of methodological quality of the qualitative and quantitative studies is summarised in text and a table, the other study designs were summarised in text only.

2.4.5 Charting the data

Included studies were organised in Microsoft Excel and the data were extracted and charted as shown in the Table 2 findings (Joanna Briggs Institute, 2020). The categories and the order in which they appeared on the chart was decided during a supervision meeting. The researcher (student) completed and organised the data in the following categories:

- Risk domain
- Author/year
- Methodology / Publication description
- Study purpose
- Location/sample
- Key findings

- Limitations (reported)

2.4.6 Collating, summarising, and reporting results

Content analysis of all eligible studies was conducted in two stages by the researcher (student): a descriptive analytical approach to establish frequencies followed by thematic analysis to identify themes and patterns systematically (Braun & Clarke, 2006). This method facilitated the creation of risk domains and study categorisation therein, risk domain frequency and a summary of the risk characteristics in relation to the identified risk domains. Deciding upon the risk domain categories was achieved after a full text review of each study and team meetings to help refine the risk domain criteria. Risk characteristics were identified by the researcher (student) through thematic analysis of the results, findings, and discussion sections of included studies to generate descriptive codes. These codes were stored and organised in QSR International NVivo 12. Theme generation was an iterative process and was achieved collaboratively by discussions with the research supervisors. Supervision meetings were held before deciding upon the final terminology to describe the risk characteristics as well as the components which defined them to ensure the continuity of reporting (Braun & Clarke, 2006).

2.5 Results

The database searches identified 2878 hits. After duplicates had been removed 1862 were screened by title and abstract. A further 1820 were excluded which left a full text review

of 42 studies, where 17 studies were excluded. No further studies were identified during a search of the reference lists of included studies. After contacting and receiving no response from the authors, three studies were unavailable resulting in 25 studies being included in this review. The search and selection are shown in Figure 2. All included studies were published between 2000 and 2019 and ten (60%) were published within the last ten years. Of the included studies, 11 used qualitative study designs, eight used quantitative methods, three were literature reviews, two were mixed methods studies and one was a Delphi study.

Figure 2. Selection process using the PRISMA flow chart (Moher et al., 2010)

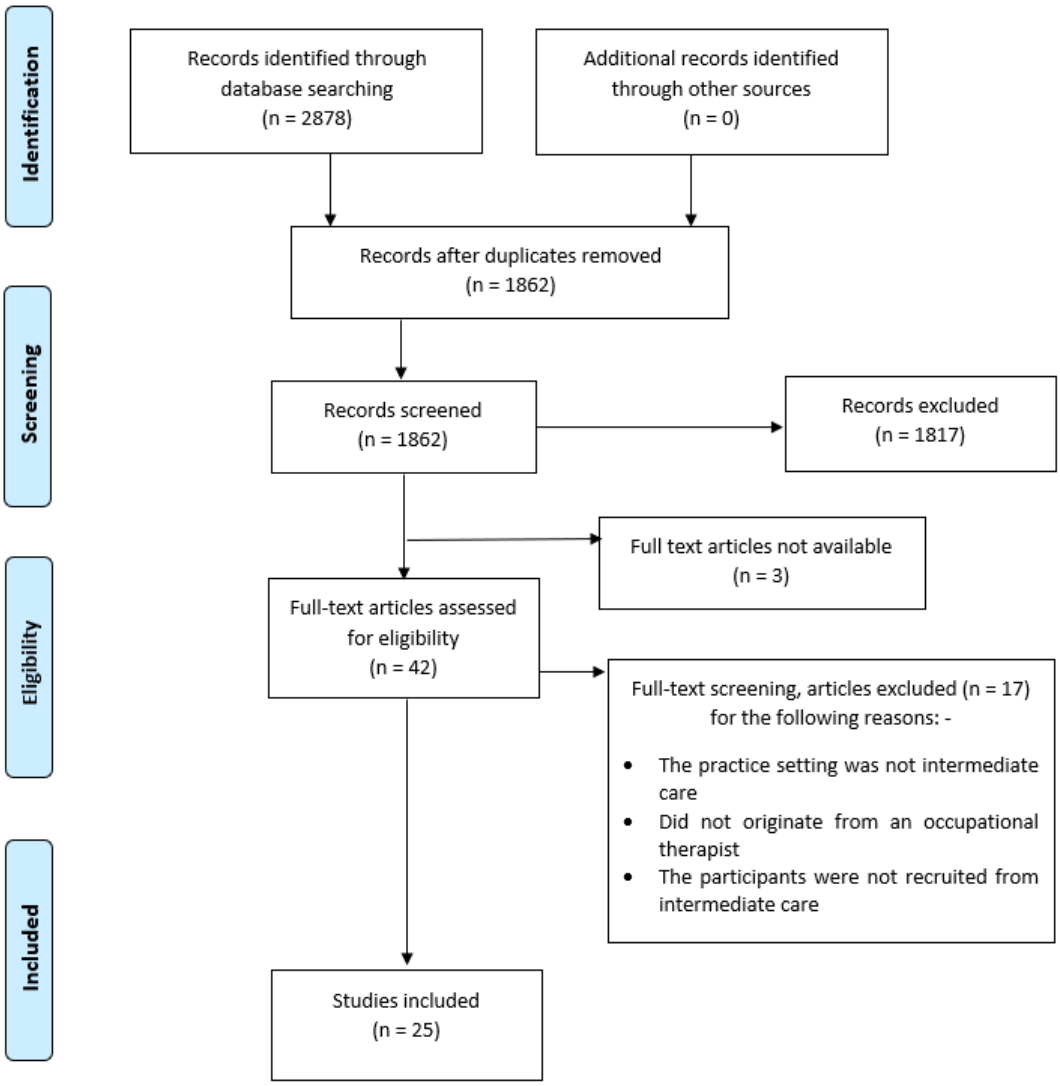


Table 2. Study Summary

Risk domain	Author(s), year	Methodology / Publication description	Study purpose	Location/ Sample	Key findings	Limitations (reported)
Activities of daily living	Gooch, 2003	Quantitative (Postal survey) British Journal of Occupational Therapy	To describe the bathing assessment methods used by occupational therapists when working with adults with physical disabilities and to explore the factors considered important during the assessment and solution phases of bathing intervention	UK (NHS and Social Services in Greater London) 90 of 108 respondents Occupational therapy (n=90) 55 completed by NHS staff 35 completed by social services staff 83.3% response rate	Methods of assessment used: - • Client observation at home without water (n=85) and face-to-face client interviews were the most used assessments (n=83). • Over 50% of the respondents indicated they used their own assessments. • Telephone interviews (n=20) were selected more than standardised assessments (n=15) Factors considered during the assessment: - • Mobility (n=89) and safety (n=89) were selected by nearly every respondent. • NHS respondents selected client priorities as a factor, not ranked so by Social Service (SS) respondents. • Safety factored higher than medical diagnosis for NHS respondents, whilst the SS respondents considered the latter more important	• Generalising the results; sample was limited to Great London • Independence of the practitioners cannot be assumed (linked to one organisation) • Reliability of the questionnaire (solely produced for the study)

					Factors considered during the solution stage: - • Client disability was selected by all respondents (n=90) followed by client priorities (n=87) and environmental factors (n=83) • Clients' priorities were again selected by NHS respondents higher than SS respondents who selected client disability slightly higher than the NHS staff. • The NHS group attributed some importance to equipment availability. The SS group attributed some importance medical diagnosis.	
Activities of daily living	Carrier et al., 2010	A scoping review Australian Occupational Therapy Journal	To synthesise current knowledge about community occupational therapists' clinical reasoning (CR) in determining interventions important to the ability to live at home.	Australia	The final analysis was performed on 15 textbooks and 25 articles (n = 19 on occupational therapists' CR, n =6 on community occupational therapists' CR) The community occupational therapists' studies (n=6) revealed five key elements: - • Cognitive processes (problem solving) underlying CR (n =3; 50%). Two different strategies identified hypothetico-deduction and pattern recognition. • Dimensions of CR (n = 4; 67%). Identified as scientific, diagnostic, procedural, narrative, pragmatic, ethical, interactive, and conditional. Frequently used simultaneously.	• A scoping review does not provide an assessment of the quality of the studies examined. • Information not identified, as textbooks are not systematically included in electronic databases. • Searches could have covered a longer period with more CR based terminology.

					• Factors influencing CR (n = 6; 100%). Factors identified as being internal and external. Internal are the therapist's expertise and personal context. External factors were the client and practice context. • Methods used to document CR (n = 6; 100%). CR knowledge development is influenced by the methods used to study it, predominantly protocol analysis (case studies, observations) and interpretative methods (grounded theory) • Elements of community occupational therapists' CR still unknown (n = 4; 67%). How community occupational therapists integrate tacit and formal knowledge is still largely unknown	
Discharge	Moats and Doble, 2006	Literature review Canadian Journal of Occupational Therapy	To review the literature regarding the decision-making process of discharge and how autonomy and risk avoidance factors influence these decisions for occupational therapists.	Canada	Factors that influence risk avoidance: - • Social values, service traditions, legal pressures, and political and economic directives. Ageism also supports risk avoidance. • Conflicting ethical principles of beneficence and autonomy may result in persuasive methods to resolve ethical dilemmas. • Family members may fail to respect risk-taking choices of the elderly in fear of health workers condemnation/legal reprisals. Risk elimination may be preferred but	• None reported

					does not justify therapeutic paternalism Autonomy and risk taking: - • Anti-paternalistic decision-making preferred. • Autonomy is dependent on context (legal, medical) • Risk avoidance can contribute to loss in self-worth, identity integrity and control. Older person homes take on a large significance and provide a sense of identity. • The traditional medical ethics perspective can fail to understand the concept of autonomy in full. Autonomy considerations in decision making of informed consent, whilst appropriate for acute care, maybe insufficient in respect of long-term decision-making Occupational Therapy and client centre practice • Guided by autonomy promotion and accepting the risk a client is prepared to take • Client centred practice ideals are often abandoned when clients place themselves in danger. Collaboratively balancing risk avoidance and autonomy is required • Clients should participate in decision making congruent with their abilities/cognitive level.	

					• Careful and considered negotiation of risk avoidance can maximise autonomy abilities in the future and together with extended rehabilitation, community-based support and continued care can facilitate better outcomes. • Barriers to adopting a negotiated approach are often systemic in nature and outside of the immediate control of an individual practitioner.	
Discharge	Moats, 2007	Qualitative (Semi-structured interview) Canadian Journal of Occupational Therapy	The study explored occupational therapist discharge decision making models and their relationship with the professional issues of client centred practice and enabling occupation for older persons	Canada (Acute and geriatric & specialised rehabilitation) Occupational therapists (n=10)	Three themes were identified: - Being client centred • Therapists support client centre practice and included family as the 'client' from two perspectives 1) involvement as caregivers 2) needed as proxy decision makers • Client centeredness became difficult when family unwilling to accept risk • When the client was not competent or where family involvement was minimal, therapists recognised a need for increased professional involvement. • Cognitively impaired but not officially 'incompetent' was recognised as complex and ill defined. Therapists struggled with risk situations where these decisions had to rest with the client to be client centred practice.	• The full saturation of data was not achieved as findings were based on single group of interviews with a small number of therapists, because of this the proposed model will need testing and further development • This researcher's biases may have influenced interpretation of the data.

					Style of decision making • Client centred practice can involve blending client defined, professionally driven, and negotiated styles of decision-making. Sometimes in this discourse, there was evidence of the use of intimidation, persuasion, and coercion. • One way that some therapists defined their practice as being client-centred was by insisting they only make recommendations, not decisions. Occupations and the importance of home • There is value to doing occupations in a familiar environment and there is a power dynamic shift in favour of the client. • With practice time constraints, home visits can be overlooked. • Therapists focus on occupations an older person is no longer safe to do and not future occupations during decision making Additionally, a negotiated model of decision-waking proposed to enable decision-making processes	
Discharge	Nygård et al., 2004	Qualitative (Focus group & interviews)	To investigate the perceptions of therapists and clients on common practice	Sweden (Geriatric inpatient care)	Client problems and occupational therapy interventions documented on the pre-discharge home visits. Problem (n=107) frequencies: -	• Data gathered within the priorities of clinical practice/client needs meant not all client

		Scandinavian journal of caring sciences	home assessments & interventions prior and post discharge from a geriatric inpatient clinic.	Occupational therapist (n=9) Participants (n=23)	• Most frequent was motor capacity which obstructs activity or involves safety risk (82/107) • Inadequate cognitive/psychological capacity obstructs activity or involves safety risk (6/107) • Explicit obstacles in physical environment (17/107) • Incapability to perform certain activities (2/107) Frequencies of therapist interventions (n=136) • Assistive devices/housing adaptation (76/136) • Contact with secondary person (25/136) • Information/recommendation (20/136) • Removing environmental obstacles, rearranging furniture (10/136) • Instructions for adapted methods of for example transfer (5/136) Clients' evaluations of interventions (n= 130) • Situations where the client was explicitly satisfied (73/130) • Situations where the client had an alternative (45/130) • Situations where the client was dissatisfied (11/130) • Situations where the client was partly satisfied (5/130) Occupational therapists were generally in agreement with the client's responses except when putting themselves at risk.	problems were addressed. • Individual therapist interpretation in categorising the data may have affected the results. • Risk of bias, as therapists may have chosen to follow up their own clients. • The distribution of client diagnosis at the time of the study may have affected the outcomes.

					Pre-discharge home visits were important for the clients' safety Temporal delay (delivery, installation of equipment) caused safety risks. Client renounced support because of the overabundance of health and social care persons on their home Follow up visits - time at home imperative for needs to be discovered and interventions to be adjusted	
Discharge	Davis Aisling and McClure, 2019	Quantitative (Survey) Irish Journal of Occupational Therapy	This study aims to investigate current clinical practice during home visits and the value that occupational therapists' attribute to home visits within an Irish context.	Ireland (Acute, rehabilitation and convalescence settings) Occupational therapist (n=122)	Results from the quantitative section • 44% completed 2-5 home visits per month, 8% completed 5-9 visits, 1.7% completed 10-14 visits, and 0.8% completed 15+ visits per month. • 50%+ reported taking between 1hr to 1 ½ to complete a home visit. 12 respondents reported 2hrs^{+} • 3% took less than 30mins to write reports, 41% of the participants reported they take between 1hr to 1½ to complete reports • 93% per cent of participants reported bringing a mobile phone, measuring tape and gloves on home visits as standard, 56% took a cardiopulmonary resuscitation mask. 9 respondents stated they took a personal alarm. • 70% of participants provide between 5 and 10 recommendations post visit Results from the qualitative section	• Reported practice, not observed practice. Therapists may be describing practice they espouse to and not representative of routine practice • Participants were from the Dublin area; the findings may suggest a bias towards urban areas and therefore may limit the generalisability of findings nationwide

					• Benefits of a home visit during discharge planning. A high number of participants identified the opportunity to assess patients within their own, familiar environment. The ability to identify potential difficulties, reduce falls risk and improve safety was also mentioned by several participants • Most participants cited lone working as a significant risk during a discharge home visit. The risk of unknown social factors included aggression from family members and anger regarding service provision faults, unruly pets, poor hygiene, and houses in disrepair (holes in floorboards) and vermin • Patient safety issues included falls risk or medical emergency as potential risks during a home visit. • Patient criteria for a home visit included living alone, falls risk, prolonged stay in hospital, changes or decrease in functional or cognitive status • The improvements to discharge planning home visits (DPHV) included standardised checklists, assessments and policies governing DPHV practice, additional time to complete visits, additional resources, better transport options, occupational therapy assistant support, secretarial/admin back up	

					and collaboration between community services and MDT. • Successful DPHV included ascertaining whether a discharge is suitable, safe, and sustainable; non-suitability was also considered a success. Success on visits was also defined as the identification of risk factors and patient/family's awareness of these factors following education	
Discharge	Simning et al., 2019	Quantitative (Longitudinal study) Journal of the American Medical Directors Association	The primary objective of the study was to examine whether rehabilitation providers can predict which patients discharged from a skilled nursing facility (SNF) would be successful in their transition to home, controlling for sociodemographic factors and physical, mental, and social health characteristics	US (Two SNF rehabilitation units) Medical providers, occupational therapists, physical therapists, and social workers (exact representation unknown)	The longitudinal study was conducted from March 2016 to November 2017 with English speaking patients aged 65+. 112 older persons (mean age 78.1 years) were recruited into the study. Patients were interviewed at 2 weeks upon admission, every 2-4 weeks during their stay and at 1 week, 1 month and 3 months post SNF discharge. The dependant variable and outcome measure were 'failed transition to home' and the independent variables were the healthcare professional's responses (predictions) and the patient's sociodemographic factors and physical, mental, and social health characteristics. A 7-point Likert-type scale from 'strongly disagree' to 'strongly agree' was used and dichotomised into 'neutral or negative prediction' and 'positive prediction'. The healthcare	• Study was not designed to test the predicative capabilities of the participants. • Precision of data - hazard point estimates, consider with caution. • The main outcome measurement is unique to the study • 2 SNF's were used - generalisability limited. • Dementia patients and those unable to provide consent were excluded • The patients' functional impairment, not known • Speech and language pathologists' data limited and not used

					professionals were asked to predict who would successfully transition to home. • The predictions of the occupational and physiotherapists were associated with the discharge outcomes • The predictions of the medical providers and social workers were not associated with the discharge outcomes The study suggests occupational, and physiotherapists may have unique insights into determining which post-acute rehabilitation patients will struggle with SNF to home transition.	
Frailty	Roland et al., 2011	Mixed methods Qualitative Repertory grid-guided interviews. Quantitative Participants were asked to rate their answers using a 7-point scale Physical & Occupational	The study's purpose was to explore physical and occupational therapists' perspectives of "frailty" within their community practice, and to develop a definition of how they view and manage frailty in their practice	Canada (Home and community centre) Occupational therapist (n=4) Physical therapists (n=7)	There was a consensus among therapists to characterize frailty as deterioration in physical and psychosocial abilities making it difficult to complete activities of daily living (ADL), resulting in functional dependence and an inability to thrive. The primary areas of frailty were discussed (a) characteristics of frailty, (b) defining frailty, and (c) managing frailty. Characteristics of frailty: - • Physical – risk of falls, poor functional endurance, and limited mobility. • Psychosocial – isolation, poor self-management, and depression Defining frailty	• Predetermined questions may have inhibited the insight into frailty • Small sample and disproportionate representation of therapists

		Therapy in Geriatrics			• Image of frailty- multiple components, complicated medical history, spectrum of severity. Managing frailty • Limited time to identify at risk populations and implement prevention strategies • Responding to crisis situations whilst managing normal case load, unable to include follow ups • Therapists primarily focus was on observing clients at home and intervening to manage frailty. Most often home-exercise programs were implemented. • The involvement and collaboration with other healthcare practitioners. Other members of the client's support network are also involved.	
Falls	Buri et al., 2000	Qualitative (Phase 1 semi structured interview Phase 2 Observational study) British Journal of Occupational Therapy	To determine if perceptual dysfunctions in the elderly with cognitive impairment as an additional risk factor for falling and, if so, what types of perceptual dysfunctions pose the greatest risk.	UK (Four residential homes) Phase 1 – (purposive sampling) Occupational therapist (n=1) Physiotherapist (n=1) Phase 2 – Researcher (n=1)	Phase 1 – Three categories emerged as being important considerations to determining perceptual dysfunction contributing to the risk of falls in the elderly with cognitive impairment: • Interaction with the environment • Movement • Psychological factors Phase 2 – Further subcategories were formulated and used to describe observed behaviour • Interaction with the environment: colours and patterns, interior furnishings, negotiation of space,	• Small sample not generalisable • Validity (trustworthiness) may have been affected by the subjective interpretations of the researcher • Observation may have affected the residents' behaviour

				Residents observed (n=unknown)	background noise and object recognition. • Movement: wandering, speed, pattern, and accuracy • Psychological factors: fear/ lack of fear and spatial disorientation Spatial disorientation emerged as the most important perceptual risk factor.	
Falls	Kinn and Galloway, 2000	Quantitative (Postal survey) British Journal of Occupational Therapy	To investigate whether therapists do anything to prevent falls and, if so, whether they assess elderly people for their suitability to be educated in how to rise after a fall.	UK Respondents (n=145) Occupational Therapy (n=105) Physiotherapy (n=32) Home Care (n=3) Nursing (n=3) Social work (n=2)	Almost all (93%) of occupational therapists and physiotherapists confirmed falls was an issue they dealt with in the over 65 age group. The range of interventions used was categorised into three broad themes environmental, physical and education. Occupational therapists' responses to the types of interventions used: - • Environmental (64%) • Physical (25%) • Educational (10%) Physiotherapists responses to the types of interventions used: - • Environmental (11%) • Physical (70%) • Educational (18%) Approximately half of the respondents (49%) assessed the ability of their patient to rise after a fall. Over half (54%) of the respondents had considered teaching or had taught people how to get up after a fall.	• The sampling method (convenience sample) produced unequal participant representation between the disciplines. This may attract criticism from a methodological perspective and interpretation of the results

Falls	Ruchinskas et al., 2001	Quantitative (A two-part survey. Part 1 - A self-reporting non-cued questionnaire. Part 2 - A self-reporting cued questionnaire) Rehabilitation Psychology	To examine the capacity of occupational, physical, Physiatry, recreation and speech therapy therapists to identify risk factors for falls	US (Three academic medical rehabilitation centres) 55 of 81 responded. Occupational therapy (n=14) Physiatry (n=12) Physical therapy (n=24) Recreation therapy (n=2) Speech therapy (n=3)	Both parts of the survey were compared to two empirically supported falls risk factors, advanced age, and history of falls. Part 1: - • 14% identified advanced age as a risk factor for falls • 5% identified history of falls as a risk factor for falls Part 2: - • 11% identified advancing age as a risk factor for falls • 77% identified history of falls as a risk factor for falls There were no significant demographical influences in how many times advanced age and history of falls was listed in either questionnaire. Additionally, there were no significant differences between disciplines on their ratings. The use of cueing helped therapists make a stronger prediction on the history of falls as a risk factor but not advanced age. Staff education on validated risk factors for falls may reduce the potential for errors and improve decision-making and patient care.	• Sampling bias, as a proportion of the respondents did not complete the survey in the allotted time • Therapists may exhibit different behaviour and clinical judgments when treating patients in a rehabilitative setting
Falls	Ruchinskas, 2003	Quantitative (Prospective cohort study)	To assess the ability of physical and occupational therapists	US (Rehabilitation unit)	• Elderly respondents (n=16) 12% reported one or more injurious falls within the 3m period post discharge	• Interpretation of the results – one cohort of therapists participated

		American journal of physical medicine & rehabilitation	engaged in rehabilitation to predict falls in the elderly within a 3-month period after discharge	15 months total duration Elderly patients (n=165) aged 60+ identified during a 12m period. Contacted (n=132) at 90 days post-discharge Physical therapists (n=14) Occupational therapists (n=7)	period. Considerably lower than the pre discharge falls rate of 38% described by the respondents before admission. • Those who had fallen before admission had a higher likelihood of falling post discharge. • Statistical differences in the rate of falling between respondents with a recent neurological event (11 of 23) versus those patients with an orthopaedic or general medical diagnosis (5 of 109) • Occupational therapists predicted 13% and physical therapist predicted 20% as a high risk of falls, slightly greater than the 12% who reported falling. • Only seven of the fallers (44%) were rated as high risk by either of the disciplines • Degree of strength, safety awareness and balance were most cited as salient factors in determining who was at high or low risk of future falls.	• A disproportional number of patients with neurological disease were lost to follow up (post discharge) • Increasing the follow up stage at 3 months to 12 months may have improved predictive accuracy
Falls	Woodland and Hobson, 2003	Literature review Canadian journal of occupational therapy	To review the current falls prevention literature for community dwelling older adults from an occupational therapy	Canada	• The literature identifies numerous risk factors involved for this population which can be categorised as intrinsic (personal) and/or extrinsic (environmental) • Occupational therapy appears to be underrepresented in the current falls prevention literature and therefore, the role of occupational therapy in	None reported

			perspective, to highlight the important contribution occupational therapy could make to this functional problem		this area may not be fully developed. • Using the Canadian Model of Occupational Performance to categorise the literature revealed some gaps in knowledge. Cultural, economic, political, and legal elements of the environment tend to be overlooked. • Falls are also attributed to personal factors (cognitive, affective, physical) that can be modified • Importantly, there is a clear gap in knowledge regarding the role occupational plays in precipitating falls • Client centred practice, compliance (client receptiveness and adherence to strategies) and follow up (to monitor adherence and safety) were identified as important considerations to prevent falls among this population	
Falls	Olij et al., 2017	Delphi study (Two rounds) Injury www.elsevier.com/locate/injury)	To determine a) how health professionals detect community-dwelling elderly with an increased risk of falling; b) which falls prevention activities are used by health professionals and	Netherlands Online Delphi study Round 1. 68% (n = 85/125) Round 2 58% (n = 72/125) Participants included: community	• Regular detection of fall risk of community-dwelling elderly with an increased risk of falling hardly takes place (median = 2 [hardly]; Inter Quarter Deviation (IQD) = 1) • The most important pitfall, was to reach community-dwelling elderly that are not in touch with health professionals (median = 5 [very important]; IQD = 1) • Involving informal caregivers was the most important success factor	• Guidelines on conducting a Delphi study are lacking • The unequal distribution of professionals, as a large group of community physiotherapists and a small group of general practitioners participated, may have influence the results

			why; c) how elderly can be stimulated to participate in falls prevention programs; and d) how to finance falls prevention.	physiotherapists, community nurses, general practitioners, occupational therapists, and geriatricians	(median = 5 [very important]; IQD = 1) The panel was asked to indicate which health professionals should particularly be involved in detection of fall risk. • Consensus was reached concerning occupational therapist, being responsible for mapping fall risks in and around the house (n = 54/72; 75%) • According to 73% of the panel (n = 37/51), 0–40% of the elderly with an increased risk of falling are referred to exercise programs. Maintaining independence is the most important positive incentive to participate (n = 19/66, 29%). • Structural follow-up is often lacking. Physiotherapist were considered key in offering these exercise programs and follow-up • According to the panel, health professionals that should particularly be involved in stimulating program participation are the general practitioner (n = 51/72; 71%) and the informal caregiver (n = 33/72; 46%). • Effective measures included medication monitoring, vision control and correction, and mapping fall risks in and around the house in falls prevention programs. No consensus was reached on the effectiveness of screening for and supplementation of vitamin D	

					• The panel indicated a combination of national health education, healthcare counselling, and removal of financial barriers, would stimulate the participation of the elderly in falls prevention programs	
Falls	Hasegawa and Kamimura, 2018	Quantitative Hong Kong Journal of Occupational Therapy	This study aimed to develop a home safety assessment appropriate to be used by occupational therapists for the elderly with risks of falls in Japan, by adapting the Westmead Home Safety Assessment (WeHSA)	Japan 50 elderly people participated in the reliability study Occupational therapists (n=13) participated in this reliability study as therapist raters Occupational therapists (n=18) Participated in the validity study	• 49 items (69%) in the WeHSA-J were reliable and relevant for identifying fall hazards in the homes of elderly Japanese, these mainly involved activities of daily living with some simple instrumental activities of daily living • The WeHSA-J generally had adequate inter-rater reliability, similar to the original WeHSA. Excellent or fair to good reliability was as follows, 65 items (92%) in the original version and 66 (93%) in the Japanese version. • Fifty elderly people (aged 78.2. +/- 7.1 years - 29 males (58%) and 21 females (42%) participated in this reliability study • The most frequent hazards were identified as internal steps/stairs, seating, bathroom, bath, and external steps/stairs. • The reasons for conducting a WeHSA-J on each participant were: a home visit before discharge from the hospital for 22 participants (44%), consultation on fall prevention for 17 (34%), and	• Small/convenience samples were used • Majority of the occupational therapy raters in the validity study were hospital employees, therefore, the evaluation items accepted in this study might be appropriate for the impaired rather than all older persons

					community-based occupational therapy services for 11 (22%)	
Falls	Pighills et al., 2019	Mixed methods (Medical chart audit, survey, and focus groups) Australian Occupational Therapy Journal	The aim of this study is to identify factors that support the local adoption of best practice environmental assessment and modification (EAM) for falls prevention within a rural health service, from an occupational therapy perspective	Australia (Regional health service including Paediatrics, rehabilitation, home assessment and aged care via inpatient, outpatient, or outreach services) Survey occupational therapists (n=14) Twelve of which participated in the focus groups (n=12) Patients' charts (n=58) containing occupational therapy entries were used for the audit	Twenty-four therapists were identified and 14 completed the survey (58.3% response rate). In accordance with the Integrated Promoting Action on Research Implementation in Health Services (I-PARHIS) framework. The results were categorised into 4 themes knowledge, attitude, confidence, and experience Knowledge: • Ten out of fourteen (71.43%) agreed there were no guidelines on best practice on environmental assessment for falls prevention • All participants agreed (100%) people at a high risk of falls include those with a history of falls, perceptual impairment, those who are aged, have co-morbidities and have had a recent hospital visit • Half of the survey respondents (50%) identified that they had attended additional formal courses on environmental assessment for falls prevention Attitude: • 78.57% strongly disagree and 21.43% disagree with preventing falls in the home is not a core concern for an occupational therapist • 64.29% agree and 28.57% strongly agree that they actively engage the	• A convenience sample was used to audit the medical charts. These were from regional occupational therapists who were more likely to provide EAM intervention for falls prevention • In the audit there was no documented evidence of the use of EAM to reduce falls risk, however, not including participant observation as part of the methodology may have resulted in a biased review of actual practice • Focus group facilitator was not an occupational therapist • Small survey sample

					patient and family in developing falls prevention action plans Confidence: • 71.42% reported feeling confident in knowing when to conduct an environmental assessment for falls prevention • 85.71% agreed or strongly agreed that they felt confident in conducting a comprehensive environmental assessment for falls prevention. Experience • 100% responded that their current practice involved working with older people at high risks of falls • 64.29% had experience in completing pre-assessment screening to identify patient who may benefit from home assessment for falls prevention • 64.28% indicated that they carried out home assessments for falls prevention weekly None of the charts audited documented a comprehensive process of hazard identification using a validated assessment tool or that an environmental assessment and modification for falls prevention intervention was carried out. Focus group discussions identified three key themes which influenced uptake of EAM: confidence in, and awareness of evidence; key stakeholders' support and knowledge of occupational therapy; and	

					perceived impact of time and resources required for implementation	
Falls	Xu et al., 2019	Qualitative (Focus groups) Disability and rehabilitation	The aim of this study was to investigate the perspectives of rehabilitation therapists on fall prevention programmes with community-dwelling stroke survivors in the Singapore context.	Singapore (Rehabilitation) Occupational therapists (n=15) Physiotherapists (n=8)	Therapist perspectives were used to adapt the Stepping on After Stoke (SOAS) falls prevention program. The qualitative data elicited from the four focus groups generated three main themes and sub-themes. Limitations of existing falls prevention intervention for stroke clients • Lack of a structured group-based falls prevention programme for stroke clients • Lack of understanding of falls prevention after stroke among the caregivers Adaptation of the Stepping On programme for stroke clients • Inclusion criteria for the SOAS programme • Recommended changes • Additional key interventions/elements needed in the SOAS programme Challenges in implementing fall prevention • Personal barriers • Social barriers • Organisational barriers • Cultural barriers Some common fall risk factors after stroke were suggested: medications (e.g., for hypertension), neurological visual disorder (e.g., hemianopia), and	• Therapists (participants) had completed the generic Stepping On programme leader training and therefore are not fully representative of the therapists working with the stroke population in Singapore

					psychological disorders (e.g., post-stroke depression).	
Language barriers	Squires et al., 2019	Qualitative (Secondary data analysis) International journal of nursing studies	To explore home health care professionals' perspectives about how workload changes from managing language barriers influence quality and safety in home health care	US (Large urban home health care setting) Occupational therapists (n=1) Physiotherapists (n=3) Nurses (n=31)	From the parent study, 142 discrete passages focused on workload, from the secondary data analysis the following themes were generated: - • Conditions that contribute to higher workloads and longer working days. These 'conditions' included transitions (e.g. weekday vs. weekend admission, timely notification of limited English proficiency status), caseload, interpreter services usage, visit length, geography, and continuity of care/language concordant visit • Willingness to address language barriers 'Willingness' reflected the overall sense of the providers' concerns and triumphs expressed when putting forth the added effort to address communication barriers with limited English proficiency patients and families to ensure quality care. • Barriers contributing to workload when addressing language barriers in home health care 'Barriers' consisted of policy, organisational, patient, and provider level factors that contributed to increasing workload in home health care in ways that lengthened the workday and potentially detracted from care	• Data taken from one agency • Qualitative study design means these findings cannot be generalised across similar practice settings

					Subsequent choices showed proactive behaviours to manage increased workload shaped by their perceived risk of the threats posed by the quality of interpreter services Integration of language access services across all points of service delivery will increase system costs; yet not adding language access services also increases costs because of the increased risk for errors related to communication problems.	
Loneliness	Chana et al., 2016	Qualitative (Semi-structured interviews) British Journal of Community Nursing	The aim of this study was to explore the attitudes of intermediate care team professionals regarding loneliness, to understand the perspectives of the broader organisation regarding loneliness and to understand whether there are specific barriers that may prevent actively detecting and managing loneliness	UK (NHS community healthcare trust) Occupational therapists (n=3) Physiotherapists (n=4) Nurses (n=3)	Findings present as four key themes: the attitudes of intermediate care team professionals towards loneliness; the perceived attitude of the intermediate care team service towards loneliness; the perceived control of intermediate care team professionals in detecting and managing issues of loneliness; and suggestions for overcoming barriers. The attitudes of intermediate care team professionals towards loneliness • A very relevant issue for intermediate care team clients • Cyclical and complex relationship between physical health, mental health, and loneliness • Identifying and referring loneliness are professional priorities but managing it is not • Barriers to referring loneliness to other services Perceived attitude of the intermediate care team service towards loneliness	• Generalising the findings. The sample was representative of healthcare roles in the intermediate care team; it was small and was from a single healthcare trust. • The views represented in this study are likely to be from professionals with an interest in loneliness in their clients

					• Loneliness is a low priority for the intermediate care team service • Intermediate care team funded to meet commissioners' requirement Perceived behavioural control of intermediate care team professionals in detecting and managing issues of loneliness • A conflict between personal and service attitudes towards loneliness in intermediate care team clients • Patient barriers to managing loneliness • Variability in health professionals' ability to identify and address loneliness Overcoming barriers • A need for training • A need for objective assessment of loneliness Some participants felt the referral process (independent and social care services) were overly bureaucratic, time consuming and unreliable. These services sometimes did not align with client needs. With large caseloads and time pressures, it was very likely that lonely clients were not being identified. Many felt loneliness was considered a low priority and influenced by care commissioners who set service performance markers by which the intermediate care team are assessed.	

Nutritional care	Mole et al., 2019	Qualitative (Semi-structured interviews) BMC Geriatrics	This study aimed to explore the experiences and perceptions of the nutritional care of people living with dementia at home from the perspectives of health care professionals and home care workers	UK (Health care professionals/home care workers residing in the South-West England) Occupational therapist (n=1) Social worker (n=1) Nurses (n=1) Dietician (n=1) General practitioner (n=1) Home care workers (n=2)	Seven interviews were conducted, as part of the interview a vignette was used. All participants (n=7) were shown and read the same vignette, which outlined a fictitious scenario of a husband caring for his wife with dementia at home. Four themes were generated: - • Responsibility for care (7/7) • In it together (6/7) • Practice restrained by policy (5/7) • Improving nutritional care (5/7) The participants felt a responsibility for those living at home with dementia received adequate care and nutritional care was an important factor in their 'duty of care'. The participants also recognised that the caregiver would need support. Challenges to providing nutritional care included limited time to spend with individuals, knowledge of appropriate food and drink choices, and decisions to replace carer support with meal delivery to reduce cost. Suggested improvements included raising awareness of nutritional needs and developing training aids regarding nutritional care and dementia Providing adequate training regarding identifying nutritional risks, helping family carers make appropriate food and drink choices will help prevent the risk of malnutrition.	• Individual perspectives of the situation in the vignette may have resulted in participants giving answers that were expected of their profession • Participants were recruited through the lead researcher's professional networks, which may have affected the interview dynamics/results.

Patient handling	Darragh et al., 2013	Qualitative (Focus groups) American Journal of Occupational Therapy	To determine how therapists have integrated and use safe patient handling (SPH) equipment in rehabilitation and how this use affects therapy practice.	US (Inpatient rehabilitation) Occupational therapists (n=14) Physical therapists (n=14) Physical therapist assistants (n=4) Occupational Therapy assistants (n=1)	Three major themes were identified which related to the question of how the equipment is used in and affects rehabilitation: choice, potential, and safety. Choice: - • Equipment selection was based on the physical, behavioural, and cognitive–perceptual characteristics of each patient; features of each device; time and environmental demands; and potential uses of each device • Functional mobility was the most reported therapeutic use for SPH. Passive mobility was reported as the second most common use of SPH • Some patients expressed fear of SPH equipment (lifts). • A minority of therapists expressed concern that lifts promote passivity or deemphasise transfer training Potential: - • Increased options in therapy, more was accomplished, and patients were able to be mobilized early in their recovery • Equipment had benefits for bariatric patients, those with medically complex conditions, or who were dependent. • Therapists considered themselves a limiting factor in manual handling. With use of SPH equipment,	• Generalization is limited because of the qualitative methodology • Cultural and policy expectations of using SPH equipment in these practice settings may have influenced the participants

					therapists were no longer a limiting factor and patients could work to their potential. Safety: - • Safety included the prevention of injury to therapists and/or patients and about patient falls, skin breakdown, or debilitation • Overall therapists thought patients were safer with SPH equipment. Fall reduction was reported. • Equipment was used to facilitate less time in bed and as prevention for …'over-shearing the skin or preventing them from lying in bed not doing much, getting pneumonias.' • Patients experienced a greater sense of security with equipment • Therapist's experienced less fatigue, pain, and strain • Confined environments and patient equipment (e.g. drains, IV poles) contributed to difficulties with using the equipment	
Practice errors	Scheirton et al., 2003	Qualitative (Focus groups) American Journal of Occupational Therapy	To examine occupational therapists' responses to practice errors in physical rehabilitation settings.	US (Four physical rehabilitation centres) Occupational therapists (n=35)	Five themes were generated: - • Concept of practice error: It is against our standards; (2) Perceived causes of practice error: Not just an individual matter; (3) Emotional responses: 'I felt horrible'; (4) Impact on practice: Doing things differently; and (5) Management of practice error: Being honest and taking initiative.	• Participants varied in age and experience • Social desirability may have affected therapist perceptions/reflections during the focus groups

					Occupational therapists valued the lessons learnt from their errors.	
Practice errors	Mu et al., 2011	Qualitative (Focus groups) American Journal of Occupational Therapy	The aim of this study was to investigate the strategies to prevent or reduce practice errors used by occupational therapists who practice in physical rehabilitation and geriatrics.	US (Physical rehabilitation or geriatrics) Occupational therapists (n=34)	Four over riding themes emerged from the data: - • Strengthen orientation and mentoring for new therapists • Ensure competency through performance competency checks • Enhance existing or establish new safety policies and procedures • Advocate for the profession and for systemic change.	• Participants varied greatly in years of practice experience and type of setting • Social desirability might have affected participants' points of view despite our efforts to minimize such impact
Practice errors	Corrado et al., 2014	Quantitative (survey) Annali di igiene : medicina preventiva e di comunita	To explore the characteristics of the clinical risk in rehabilitation to learn more about its extent, its components, and its implications for the user	Italy (49 private rehabilitation centres) Four different disciplines (representation between disciplines unknown) • Occupational therapy • Speech therapy • Physiotherapy	Out of a total of 556 questionnaires distributed, 493 were returned (88.6% response rate.). 21 error types were categorised in to 7 macro categories. 1) Errors linked to structural aspects and the rehabilitation setting; 2) Errors linked to information; 3) Errors linked to organisational, bureaucratic and administrative aspects; 4) Errors linked to technical and professional aspects; 5) Errors linked to relationship aspects; 6) Errors linked to the application of and adjustment to specific current legislation; 7) miscellaneous errors. • 441 respondents reported 15673 errors. On average 35 errors during	• Professional setting with no tradition of participating in research studies, whose workers were not accustomed to reporting their errors • Some interviewees may have doubted that their anonymity would be respected and, as a result, may have under-reported the events due to fear of their mistakes being discovered

				• Psychomotor education	their careers. Seniority of the healthcare workers analysed to be around nine and a half years, with a modal value of ten years • Out of the 15673 errors, 75.17% occurred in outpatients' clinics, 11.74% in other spaces, 7.06% in a gym and 5.92 in inpatient facilities and 0.09 not stated • The consequences were mild in 40.16% of cases, while around 14% of the errors produced serious consequences. 51% produced moderate or serious consequences • Most frequent occurring errors (38.38%) were linked to errors concerning technical and professional aspects: wrong dose errors, treatment-planning errors, and functional assessment errors. • The second highest frequency (17.41%) was linked to 'errors linked to information' • Errors relating to 'organisational, bureaucratic and administrative aspects' were 17.30% of total events • Organisation/systems latent risk was described in greater details as: poor maintenance of equipment, lack of rehabilitation tool uniformity, inadequate identification of roles and work organisation, excessively small, unhygienic, and insufficiently	

					private therapy areas, wrong dose errors linked to local health service prescriptions, and too many services per unit of time, with the consequent impossibility to communicate with other professionals. • Other reported errors included excessive empathy and the risk of burnout.	

2.5.1 Methodological quality assessment

The qualitative studies reviewed were diverse and used a variety of study designs, including grounded theory, phenomenology and secondary data analysis. The prominent data collection methods were semi structured interviews and focus groups. Four main areas presented a quality concern, those were the sampling methods used, the role of researcher, decision trail auditability and trustworthiness. The sampling method was often not described in detail and were in most cases not related to sampling redundancy, however, it was noted that achieving data saturation in relation to recruiting a sample with flexibility may not have been an objective for these studies. The role of researcher was often overlooked in respect of their level of participation and expertise. Regarding auditability concerns, decision-making trails relating to how codes of data were identified and how they were transformed into themes was not reported in detail. The four components of trustworthiness, those being credibility, transferability, dependability, and confirmability (Connelly, 2016) were not all addressed in the majority of the studies reviewed.

The quantitative studies reviewed used three prominent study designs, those being, cross-sectional, cohort and evaluative. The quality assessment of these studies alluded to potential deficiencies in three areas, which were the sample size justification, the reliability and validity of outcome measures and the methods used in data analysis. None of the studies appraised were interventional, therefore, some of the critical appraisal tool used was not applicable. Regarding the sampling method, the sample size was not justified for the studies

employing inferential statistical analysis, possible selection bias was not reported, groups were not equal in size and the sample was often not described in detail. Outcome measures were not reported in terms of their empirical validity and reliability and some studies omitted whether they used a pilot study or employed a screening process to determine whether their outcome measures or psychometric scales were reliable and valid. The rationale for using statistical testing was rarely described and most studies reported limitations to the generalisability of their studies. Additionally, the remaining studies, mixed method (n=2) and a Delphi study also presented quality concerns in the sampling method reported. One out of the three literature reviews in this study used systematic methods and these studies ranged from 2003 to 2010 which may bring concern to their current clinical relevance in relation to this study's research objectives. The quality assessment summary of the quantitative and qualitative studies can be seen in Table 3 and Table 4 respectively.

2.5.2 Risk domains

With regard to the Research Aims 1 & 2 the risk domain frequencies were: Falls (n=9), Discharge (n=5), Practice errors (n=3), Activities of daily living (n=2), Pressure care (n=1), Frailty management (n=1), Patient handling (n=1), Loneliness (n=1), Nutritional care (n=1) and Language barriers (n=1) as shown in Figure 3. The studies that relate to falls (36%), discharge (20%) and practice errors (12%) represent the highest frequency of risk domains and contribute to 68% of the total studies included in this review.

Table 3. A quality assessment summary of the quantitative studies

Quantitative								
Studies **Quality assessment Questions**	**Gooch , 2003**	**Davis Aisling and McClure , 2019**	**Simning et al., 2019**	**Kinn and Galloway , 2000**	**Ruchinskas et al., 2001**	**Ruchinskas, 2003**	**Hasegawa and Kamimura, 2018**	**Corrado et al., 2014**
1. Was the study purpose clearly stated?	✓	✓	✓	✓	✓	✓	✓	✓
2.Was relevant background literature reviewed?	✓	✓	✓	✓	✓	✓	✓	✓
3.Was the design appropriate for the study question?	✓	✓	✓	✓	!	✓	✓	✓
4.Were any bias(es) identified or considered?	✓	✓	✓	✓	✓	!	!	!
5.Was the sample/sampling process described in detail?	!	✓	✓	×	!	!	!	!
6.Was sample size justified?	×	N/A	×	N/A	N/A	×	×	N/A
7.Were the outcome measures reliable?	!	!	!	!	!	✓	✓	!
8.Were the outcome measures valid?	!	!	!	!	!	✓	✓	!
9.Intervention was described in detail?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10.Contamination was avoided?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11.Cointervention was avoided?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12.Results were reported in terms of statistical significance?	✓	N/A	✓	N/A	N/A	✓	✓	N/A
13.Were the analysis method(s) appropriate?	!	!	✓	✓	!	✓	!	!
14.Clinical importance was reported?	✓	✓	!	✓	✓	✓	✓	✓
15.Dropouts were reported?	N/A	N/A	✓	N/A	N/A	✓	N/A	N/A
16.Conclusions were appropriate given study methods and results?	✓	✓	✓	✓	✓	✓	✓	✓

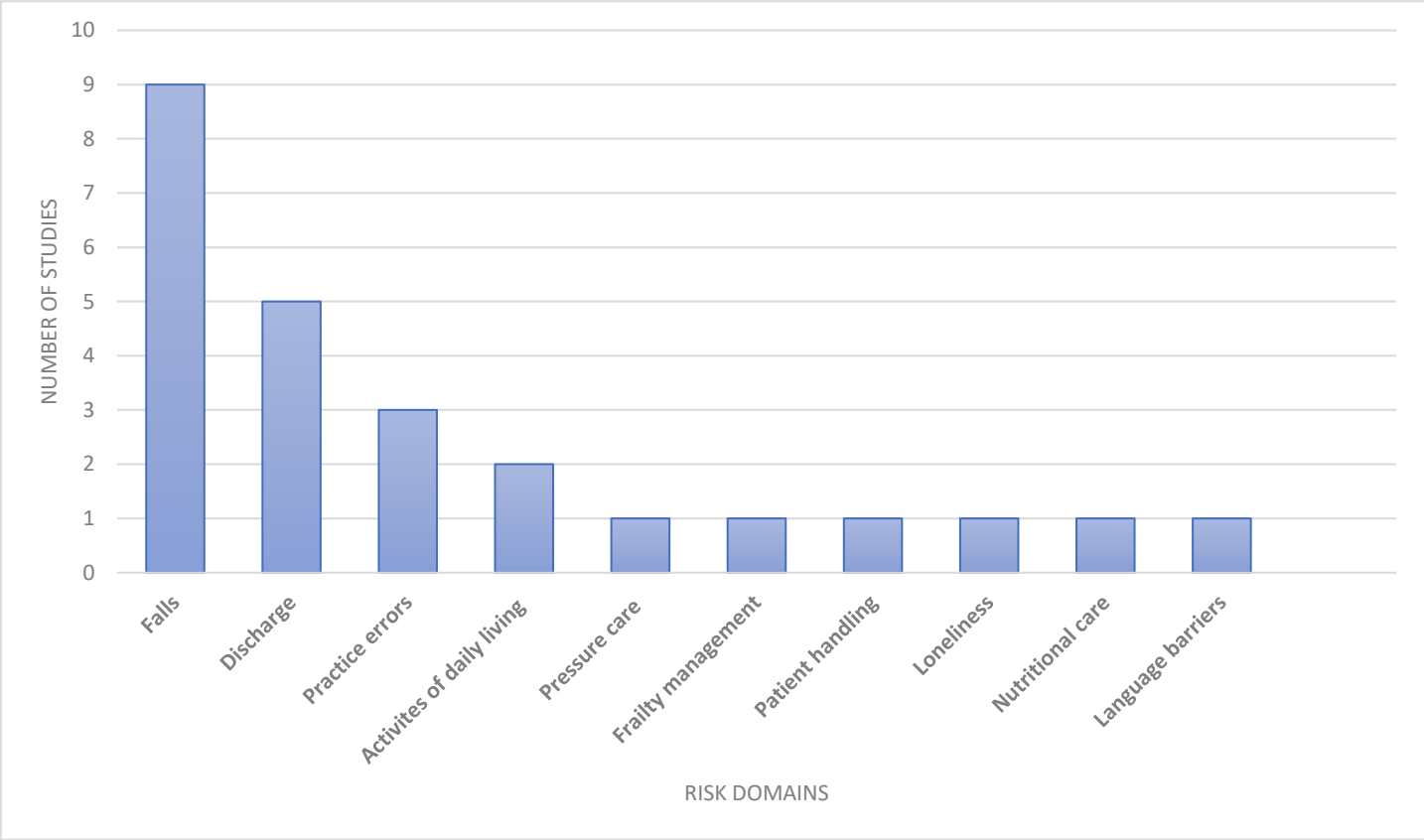
Table 4. A quality assessment summary of the qualitative studies

Qualitative											
Studies **Quality assessment questions**	Moats, 2007	Nygård et al., 2004	Buri et al., 2000	Xu et al., 2019	Squires et al., 2019	Chana et al., 2016	Mole et al., 2019	Darragh et al., 2013	Scheirton et al., 2003	Mu et al., 2011	Rose and MacKenzie, 2010
1. Was the study purpose clearly stated?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.Was relevant background literature reviewed?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3.Was the design appropriate for the study question?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	**!**
4.Was the sample/sampling process described in detail?	✓	**!**	✓	**!**	✓	**!**	**!**	**!**	✓	**!**	**!**
5. Was the sampling method appropriate to the study purpose or research question?	**!**	**!**	✓	**!**	**!**	✓	✓	**!**	✓	**!**	✓
6.Was sampling done until redundancy in data was reached?	×	×	×	✓	**N/A**	×	×	×	×	×	×
7. Clear and complete description of the site and participants?	✓	✓	✓	**!**	✓	✓	✓	✓	✓	✓	✓
8. Clear role of the researcher and their relationship to the participants?	×	✓	✓	**!**	**!**	×	✓	**!**	**!**	×	**!**
9. Was there sufficient information to understand the data collection?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10.Procedural rigor was used in data collection strategies?	✓	✓	✓	✓	✓	✓	**!**	✓	✓	✓	✓

11. Data analyses were inductive and appropriate?	✓	✓	!	✓	✓	✓	✓	✓	✓	✓	✓
12. Findings were consistent with & reflective of data?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13.Decision trail developed?	×	×	×	×	×	×	×	×	×	×	×
14. For auditing, is the process of analysing the data was described adequately?	✓	✓	!	✓	✓	!	✓	!	!	!	✓
15.Did a meaningful picture of the phenomenon under study emerge?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16.Was there evidence of the four components of trustworthiness?	×	×	×	×	×	×	×	✓	✓	×	×
17. Conclusions were appropriate given the study findings?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18. The findings contributed to theory development & future OT practice/ research?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Key: ✓ = yes; × = no; ! = unclear or not reported and N/A = not applicable.

Figure 3. Risk domain frequencies.



Examination of the nature and scope (Aim 2) of the risk domains was conducted to identify the research methdologies, practice settings and the focus of the research within each risk domain, as presented in Tables 5, 6 & 7. In describing the common areas of risk as risk domains, three main areas of ambiguity were identified and resolved:

- The 'Discharge' risk domain included those studies that focused on home visits prior to discharge. All home visits were initiated in the context of discharge; therefore, discharge became the area of risk and was categorised as the risk domain.
- The 'Activities of daily living' risk domain incorporated those studies which focused on assessments, interventions, and the clinical reasoning of occupational therapists in the determining ability during activities necessary to remain independent, safe and to live at home.
- Where multiple risk domains were identified, the aim(s) and primary focus of the study became the over-riding factor in risk domain determination

2.5.3 Risk characteristics

To address Aims 2 & 3, prominent themes, and features of risk from the reviewed literature were categorised as risk characteristics. Three risk characteristics were identified: (1) Risk awareness and identifying risk; (2) Decision-making under risk; (3) Improving safety.

Table 5. Frequency of research focus by risk domain.

Risk domain / Research focus	Falls	Discharge	Practice errors	Activities of daily living	Frailty	Language barriers	Loneliness	Nutritional care	Patient handling	Pressure care
Prediction	1	1								
Prevention *(including adapting strategies)*	5		1							
Intervention		1								
Clinical practice (incl. management of conditions)		1	1						1	
Perceptions (incl. perspectives)			1		1	1	1	1		1
Risk factors	2									
Decision making		2								
Assessment *(including assessment modification)*	1	1		1						
Detection	1									

Note: includes multiple areas of focus within a single study

Table 6. Frequency of practice setting by risk domain.

Risk domain / Practice setting	Falls	Discharge	Practice errors	Activities of daily living	Frailty	Language barriers	Loneliness	Nutritional care	Patient handling	Pressure care
Home (including residential homes)	2	1			1	1		1		
Rehabilitation (including convalescence settings)	4	2	3							1
Inpatient	1	1							1	
Acute care (including acute rehabilitation)		1								
Community (including community centre)				1	1		1			1
Other (incl. outreach or other health services	1									

Note: includes multiple practice settings within a single study

Table 7. Frequency of research methodologies by risk domain.

Methodology	Risk domain	Falls	Discharge	Practice errors	Activities of daily living	Frailty	Language barriers	Loneliness	Nutritional care	Patient handling	Pressure care
Qualitative		2	2	2			1	1	1	1	1
Quantitative		4	2	1	1						
Mixed methods		1				1					
Delphi		1									
Literature review (Incl. scoping review)		1	1		1						

2.5.3.1 Risk awareness and identifying risk

Risk awareness may be defined as the acknowledgement of a condition, disability, disease, patient safety issue or a risk-prone situation that when unaddressed has the potential to cause harm. Risk identification includes best practice methods for identifying risk and/or risk factors that present safety issues or inhibit wellbeing.

Ruchinskas et al. (2001) emphasised the importance of identifying known fall risk factors to support accurate fall prediction and found cueing helped predictive accuracy and participants' ability to identify 'history of falls' but not 'advancing age' risk factors. Ruchinskas (2003) found therapists demonstrated some predicative capability for falls, however not exceeding that of using two major predictors: 'falls history' and 'presence of a neurological condition'. In contrast, Pighills et al. (2019) surveyed occupational therapists and found the majority agreed that people at a high risk of falls include those with a history of falls, visual impairment, those who are aged, have co-morbidities or had had a recent hospital visit.

Several studies have focussed on identifying and mitigating risk factors. Buri et al. (2000) found perceptual dysfunction was related to falls in older people with cognitive impairment and spatial disorientation was the most important perceptual risk factor. Xu et al. (2019) sought to adapt a falls' prevention programme for stroke survivors as they have condition-specific risk factors for falling which include hypertension medications, neurological

visual disorder, and post-stroke depression. Occupational therapists understand and routinely ask about pressure care needs (Mole et al, 2019) and use a client-centred approach to identify and address such issues (Rose & Mackenzie (2010). They perceive loneliness as a psychosocial risk factor associated with higher risk of developing poor health outcomes, epitomised by social isolation, depression and physical deconditioning, lack of self-care and falls (Chana et al., 2016). Bathing for adults with physical disabilities is seen as a potential risk owing to hard, sharp surfaces and the presence of water and occupational therapists ranked the most important assessment and solution considerations as mobility, client priorities, safety factors, medical diagnosis, and the availability of bathing equipment (Gooch, 2003).

Studies investigating home visits as an intervention during discharge have focused on client mobility and functional deficits, unsafe environments, and risk-prone situations. Nygård et al. (2004) found that occupational therapists associate client problems during discharge home visits with inadequacies in motor, cognitive and psychological capacity and environmental hazards. Davis Aisling & Mc Clure (2019) identified home visits as potentially unsafe areas of practice for therapists, sometimes involving lone working or dangerous social situations and hazardous environments.

Best practice methods for equipment selection for safe patient handling was associated with the awareness of physical, behavioural, cognitive, and perceptual characteristics of each patient, the equipment's features, suitability, and the environmental demand (Darragh et al., 2013). Barriers that inhibit patient safety and cause practice errors were investigated by Scheirton et al. (2003); Mu et al. (2011) and Corrado et al. (2014). Scheirton et al.

(2003) and Mu et al. (2011) findings suggest occupational therapists consider that practice errors arise from individual and organisational failings. Corrado et al. (2014) found poor maintenance of equipment, unsuitable private therapy areas, medication errors, unrealistic time scales for services to communicate, confusion over role, inadequate organisation of workload and lack of uniformity in rehabilitation tools caused latent risk factors in organisations and their systems.

2.5.3.2 Decision-making under risk

Risk characteristics of 'decision-making under risk' refer to studies that include one or more risk judgements in prevention strategies, assessments, predictions, and interventions to manage risk and/or delineate the clinical reasoning in decision-making.

Clinical reasoning has been found to incorporate many perspectives including using clinical experience and learning through error. Carrier et al. (2010) asserted that decision-making components used by community occupational therapists include interactive decision-making, quick formation of solutions prior to comprehensive reasoning and dimensions of clinical reasoning used simultaneously. Additionally, integrating tacit knowledge with formal knowledge were features of this decision-making influenced by internal (personal context) and external (practice context) factors. Rose & Mackenzie (2010) found that clinical reasoning in occupational therapy pressure care was multifactorial involving client diagnosis, prognosis, and collaboration. Additionally, the volume of the products, cost, equipment needs, and their impact were also part of the decision-making process that often led to 'compromise' and 'trial and error' methods. In

assessing for frailty, Roland et al. (2011) established that therapists would look for signs of poor judgement, impaired decision-making, limited physical function and cognitive ability to recognise and articulate needs. In the over 65 age group, Kinn & Galloway (2000) contend the likelihood of injury increases for those who cannot rise after a fall and found clinical experience to teach clients how to rise was the only reported method used to mitigate this risk. Scheirton et al. (2003) found learning through error was considered a valued learning experience in their study of occupational therapists' responses to practice errors.

Deficiencies in organisational processes and approaches to therapy were found to influence decision making under risk. Mole et al. (2019) identified that organisational failings and therapist inadequacies can affect nutritional care, specifically limited time, nutritional knowledge, and financial pressure to replace carers with meal delivery support. Corrado et al. (2014) found practice errors relating to wrong dose, treatment planning and functional assessment were the most frequently reported and organisational, bureaucratic and administrative factors were important considerations in clinical risk management.

Differing approaches to assessment were seen to influence decisions relating to risk-prone activities. Gooch (2003) found assessing bathing in adults with physical disabilities was inconsistent and not always conducive with best practice methods for determining functional ability. Telephone assessments were more frequently reported than the use of standardised assessments and over half reported using their own assessment methods and when face-to-face assessment took place it was mostly conducted without water.

Enhancing standardised methods in order to improve decision making under risk was considered in the studies by Xu et al. (2019) and Hasegawa & Kamimura (2018), where adapting fall assessment and prevention programmes were brought more in line with the client group, culture and environmental demands. Pighills et al. (2019) found environmental home assessments and modifications for falls were affected by therapists' confidence in and awareness of guidance, key stakeholder support, misunderstanding the value of occupational therapy, financial implications, and time to complete modifications and administration. Risk prediction is an inevitable component of risk management and identifying those who may fall with a degree of predictive accuracy in the over 60 age group was found to be difficult (Ruchinskas, 2003). In contrast, Simning et al. (2019) found the predictions of the occupational and physiotherapists were veridical with discharge outcomes in older adults transitioning to home.

Ethical considerations, client-centred decision-making and client behaviour were found to be factors in mitigating risk. Following up on recommendations to review compliance to interventions and adopting a client-centred approach were found to be important components in attempting to prevent falls for those older adults living alone (Woodland & Hobson, 2003). Moats & Doble (2006) found an association between risk-taking and client- centred practice as clinical decision-making is often guided by autonomy promotion and accepting the risk a client is prepared to take. Their findings suggest autonomy promotion is subject to conflicting ethical principles, the fear of risk-taking repercussions, socio-political values, service traditions, prejudice and or economic directives that support risk avoidance. These factors were identified to sometimes lead to inappropriate methods of care involving persuasion, coercion and intimidation (Moats, 2007). Additionally, the findings of Nygård et al. (2004) suggest a client-centred approach is tested when a client's

behaviour increases risk and Moats & Doble (2006) found client centeredness is often abandoned when clients place themselves in danger.

Systemic organisational factors were found to influence decisions and behaviours relating to risk-prone situations. Squires et al. (2019) found preventing the miscommunication of risk in the use of interpreter services engendered proactive decisions relating to the organisation of workload to ensure harm did not result from inaccurate interpretation. Chana et al. (2016) found intermediate team members considered ‘loneliness’ a relevant issue, however, managing loneliness was a low priority within the intermediate care service caused by a propensity to work only towards symptoms and functions within a traditional medical model.

2.5.3.3 Improving safety

The ‘improving safety’ risk characteristic includes recommendations for improving risk-prone areas of practice, adaptation or modification of therapeutic tools, removal of barriers inhibiting safety, research development and organisational factors not conducive with safe practice.

Improving falls research, education, clinical supervision, and prevention programmes were seen as necessary to increase the uptake in programme participation, mitigate risk and to sustain services. Olij et al. (2017) reported the need to remove financial barriers and improve healthcare counselling and national health education. Pighills et al. (2019) called

for better access to peer support and collaboration with key stakeholders. In recognition of increasing health care costs, Xu et al. (2019) contend that group-based falls prevention interventions for stroke survivors such as ‘Stepping On’ could improve cost effectiveness. Hasegawa & Kamimura (2018) developed a Japanese version of the Westmead Home Safety Assessment to prevent falls in older adults and identified further research was required to improve its reliability and validity. Ruchinskas et al. (2001) and Ruchinskas (2003) contend staff education on empirically supported risk factors for falls may reduce the potential for error and improve decision-making and patient care. Kinn & Galloway (2000) found nearly half of therapists did not teach older persons how to rise from the floor after a fall. Recommendations for improvement included more teaching at undergraduate level and clinical supervision.

Factors identified to improve discharge planning and home visits included systemic organisational change, collaboration and communication between key stakeholders and client centeredness approaches. Davis Aisling & Mc Clure (2019) proposed additional time to complete visits, standardised checklists for hazard identification, further policy guidance, better transport options, occupational therapy assistant support, administrative resources and collaboration between community services and multi-disciplinary teams. Nygård et al. (2004) recommended service improvements for discharging inpatient older adults in line with their findings, which concluded the client’s wellbeing can be affected by too many workers visiting them, the adoption of follow-up visits and better communication in providing care and ordering equipment.

Alleviating inhibitive workloads and removing barriers preventing best practice, improving working relationships, assessment tools, education and research were identified in many of the studies reviewed. Roland et al. (2011) found that ameliorating the effects of a therapist's workload could potentially improve frailty detection amongst at risk populations, facilitate prevention contingencies and response to acute cases. Squires et al. (2019) found a consensus amongst their participants that supporting clinicians to manage non-English speaking patients would potentially improve outcomes and quality of care. Chana et al. (2016) recommended improving the detection and management of loneliness within intermediate care services by addressing the following barriers: high workloads, unsatisfactory referral systems and lack of close working with social care and independent sector services. Additionally, bringing reliable brief assessments into practice, training on detecting and managing loneliness and improving working relations with key stakeholders were seen as necessary for improving services. Corrado et al. (2014) and Mu et al. (2011) recommended focusing on and advocating for systemic change which would help reduce practice errors and improve patient safety. Scheirton et al. (2003) recommended future occupational therapy research should target, explore, and develop specific strategies to prevent and reduce practice errors.

Mole et al. (2019) proposed improvements in the detection and management of nutritional care including developing training aids, education on identifying nutritional risk and helping families make appropriate meal choices to prevent malnutrition. Rose & Mackenzie (2010) suggested further and clearer guidance on the occupational therapy role in pressure care for undergraduate educators and service managers to educate students and existing practitioners. Darragh et al. (2013) recommended further research relating to the development of equipment designed for therapeutic activity is crucial for therapist and

client safety. Gooch (2003) found further investigation was required to determine the safety considerations for adults with physical disabilities bathing and what risk factors should be considered by occupational therapists.

2.6. Discussion

As per the scoping review aims and research question, the common areas of risk and their characteristics in intermediate care from an occupational therapy perspective have been set out in this scoping review. Twenty-five articles were reviewed comprising a range of study-designs and methodological approaches. The common areas of risk have been described as risk domains and three prominent risk characteristics have been identified from the literature reviewed. In terms of methodological quality, there were some areas where quality assessment items were not reported across many or all included studies. However, all studies were found to have relevant and meaningful conclusions and, therefore, worthy of attention and significant to this study.

'Falls', 'Discharge' and 'Practice errors' were the most prominent risk domains accounting for seventeen (68%) of the studies reviewed, and the remaining eight studies accounted for seven risk domains (see Figure 3). There is an absence of studies that focus on the components of risk management particularly outside of the 'Falls' and 'Discharge' risk domains (see Table 5) and 'Rehabilitation' settings followed by 'Home' and 'Community' were the most common research locations (see Table 6). The majority of research reviewed was qualitative in nature or used descriptive quantitative survey designs (see Table 7). However, many of these studies were not about risk itself but sought to

understand therapists' perspectives of a particular area of practice that is synonymous with risk. The focus of these studies were establishing conceptual perspectives, working practices, barriers to providing care and the occupational therapy role and did not explicitly focus on how risk was mitigated in these risk domains. Moreover, none of these studies sought to investigate the effect strength of positive risk-taking barriers or investigated differences in risk perceptions at different levels of occupational therapy experience. In this context, combining these areas of investigation in this research programme would be commensurate with originality whilst answering to an important yet unresearched area of practice.

The most common risk domain was 'Falls' accounting for nine studies and many risk characteristics in this review. This reflects falls being the major cause of disability and mortality in older people in the UK (DOH, 2001). Older adult fall prevention is complex with over 400 risk factors for falls. The risk of falling appears to increase with the number of risk factors and this requires multifactorial risk assessments by different healthcare professionals to target interventions to mitigate fall risk factors (National Institute for Health and Care Excellence, 2015). The methods of fall prevention and management in the 'Falls' risk domain concentrated primarily on physical, psychosocial, and environmental factors and the effect on occupation was not fully explored. Woodland & Hobson (2003) found occupational therapy was underrepresented in falls literature and there was a clear gap in knowledge regarding the role that occupational therapy plays in older adults fall prevention. The role of occupational therapists working with older adults to prevent and manage falls is not exclusive to those working in specialist falls services as 'person', 'environment' and 'occupation' considerations align with intrinsic (personal), extrinsic (environment) and behavioural (occupation) fall risk factors (RCOT, 2020). The process of

how falls risk factors are reconciled with occupational routines in intermediate care remains unclear from the literature reviewed.

The ‘Discharge’ risk domain included five studies that support discharge planning as multifactorial and subject to risk. Older adults are likely to have or develop multi-morbidity which is known to increase the likelihood of hospital admission and re-admission (Age UK, 2019) and intermediate care is essential to facilitate timely and safe discharge (NHS Benchmarking Network, 2017). Nygård et al. (2004) and Davis & McClure (2019) assert home visits during discharge planning are important for identifying risk associated with problems related to a client’s physical, cognitive and psychological capacity in addition to assessing their environment for hazards. In contrast, Nygård et al. (2004) found occupational therapy interventions predominantly focus on ameliorating the effect of physical impairment by prescribing assistive equipment or environmental adaptations.

Moats & Doble (2006) and Moats (2007) contend discharge planning during home visits often involves autonomy versus safety considerations in balance with professional objectives, support and resource availability and the concerns of family and carers. Whilst this review has provided insight into the styles of reasoning that factor into decision making under risk there is a lack of information relating to how the severity, impact and likelihood of risk is assessed to safely facilitate discharge and promote independence.

Making judgements on risk to prevent or reduce the likelihood of practice errors introduces another perspective in risk management. The focus of many studies in relation to mitigating harmful risk concentrates on therapeutic activity; however, three studies categorised in the 'Practice error' risk domain explore causational factors beyond that of the individual (Scheirton et al., 2003; Mu et al., 2011; Corrado et al., 2014). Organisational risk factors can be localised or systemic and they can also impact service users disproportionately. They can relate to all aspects of an organisation including policies, procedures, the actions of staff, management of resources and the availability and provision of assistive equipment (Mu et al., 2011; RCOT,2017). These risk factors can be latent and less obvious (Corrado et al., 2014) and their potential effect cannot be overlooked or considered beyond any responsibility to take action to mitigate their potential harm. Practice errors can cause emotional responses as they are seen against professional standards (Scheirton et al., 2003); however, their inevitability also provide opportunities to improve services. Open and honest reporting will facilitate learning through error and support a 'whole system' approach to mitigate their future occurrence (Scheirton et al., 2003; RCOT,2017).

Risk awareness and identifying risk is the first step in the risk management process. Haxby et al. (2011) assert risk awareness means that individuals and organisations can potentially prevent practice errors from causing harm to patients. Likewise identifying risk relating to clinical, operational, and financial processes is fundamental in risk management and to creating sustainable, safe, effective healthcare (Haxby et al., 2011). Making decisions under risk sometimes requires using contradictory or incomplete information making the determination of risk factors difficult. Risks are quite often viewed as socially constructed and determining the likelihood and severity of any potential event is dependent on

subjective viewpoints which are influenced by many factors including heuristics and biases (Breakwell, 2007; Tversky & Kahneman, 1974). The result of such influences can act against effective decision making and quality of care. Many factors to reduce harmful risk, support decision making and improve the quality of care are evident in the 'Improving safety' section of this review, however, education and training are prominent themes which can support decision making under risk, improve risk management skills and help create a risk enablement culture (RCOT,2017).

Despite the scope of risk characteristics identified, the methods of how occupational therapists assess the severity and likelihood of risk, communicate it, and evaluate any outcomes from interventions relating to it, are notably absent in the literature. The National Institute for Health and Care Excellence (2017) recommend occupational therapists support positive risk-taking in intermediate care. This review did not identify any studies that explicitly focus on how occupational therapists facilitate risk enablement or positive risk-taking (RCOT, 2017). However, there are many examples of the implicit approaches occupational therapists are employing to ensure occupational dysfunction is ameliorated, harmful risk is mitigated, and positive outcomes are realised.

2.6.1 Implications for this programme of research

This scoping review has elucidated the common areas of risk and their characteristics from an occupational therapy intermediate care perspective from the available literature. It did not identify any studies which focused on occupational therapy risk management or positive risk-taking. Moreover, it has not identified how risk is reconciled with older

adult's occupational needs and how occupational therapy practice in intermediate care has been directed in this respect.

This scoping review has identified that 'Falls' and 'Discharge' are the most prevalent risk prone areas of intermediate care provision. This is not surprising considering falls in older adults are multidimensional with many hazards and risk factors to consider, as such, prior knowledge and experience to determine the most harmful are important. Empirically, some falls risk factors have been found to present higher rates of risk. Whilst predicting falls is difficult it was found that cueing helped predictive accuracy. In this context, this emphasises that predicting and managing risk is subject to knowledge (recognising and recalling cues) and this directly links effective risk management with identifying and understanding the importance of risk factors which typically reside in a risk domain.

The 'Discharge' risk domain findings also affirm that occupational therapists are focused and seek to mitigate factors that potentially reduce a client's safety during a discharge to home assessment. As such, there are many factors which can influence risk related decision making that relate to the client (i.e., mobility and functional deficits) and their home environment (i.e., clutter, uneven floors, inadequate banisters, and steep stairs).

These findings are important considerations for the direction of this research. Relevant decisional factors have been identified in each domain through the elucidation of the characteristics of these areas of risk. However, there are no examples of how these decisional factors effect decision-making, especially, what impact they have in risk related decisions.

Risk perceptions are known to differ between different experience levels, in this context there is a lack of knowledge that either supports or refutes this in the field of occupational therapy. Moreover, there is a gap in knowledge to how positive risk-taking is employed in an occupational therapy intermediate care context and how the positive risk-taking barriers identified in Chapter 1 might affect decision making across experience levels.

2.6.2 Strengths and limitations

This scoping review has been conducted using a systematic and rigorous process including a comprehensive quality assessment of the studies under review. Intermediate care has different definitions and therefore a broad and inclusive criterion was adopted. This resulted in a broad focus on different areas of practice that may not be fully representative of any specific intermediate care setting. Many studies relating to discharge were screened out as they did not meet our definition of intermediate care and these studies may have added value to this review. There were studies that included perspectives from disciplines other than occupational therapy and this must be considered in the findings of this review. Additionally, three studies were not available.

The strengths of the scoping review findings in relation to this research programme are that a comprehensive review of the literature has been conducted and will inform where future research can be targeted to address the gaps in knowledge identified. At this point and in the context of occupational therapy intermediate care, it is known that risks need to be managed, there are prevalent risk domains and associated characteristics and whilst positive risk-taking must be employed there are no explicit examples of this in the

literature reviewed. Moreover, Chapter 1 has identified that employing positive risk-taking is sometimes subject to barriers that may discourage those who are tasked with employing it. In relation to this and that empirically risk perception research has found that novices are less veridical in their risk assessments, student and novice occupational therapists' perceptions may be disproportionately affected by risk and or positive risk-taking barriers in comparison to experts, especially, in the context of the complexities of older adult occupational therapy intermediate care.

A limitation in respect of the scoping review to this research programme is that it is a desk-based approach. In this context, it does not provide a face-to-face clinical viewpoint of the common areas of risk in occupational therapy intermediate care or whether positive risk-taking barriers influence occupational therapy interventions. Therefore, it was logical to obtain a clinical perspective of the common areas of risk and the most prevalent positive risk-taking barriers in occupational therapy intermediate care in the next stage of this research programme.

2.7 Chapter summary

This scoping review has provided a broad overview of risk as it pertains to areas of intermediate care and reablement through the lens of occupational therapy. It has achieved its aims to identify the common areas of risk and their characteristics from an occupational therapy intermediate care perspective in relation to the literature reviewed. Ten risk domains and three prominent risk characteristics have been identified with 'Falls' and

‘Discharge’ being the most prevalent risk domains in the articles reviewed. Within the characteristics identified, there are many risk related decisional factors. These decisional factors include intrinsic or extrinsic considerations of hazards and risk factors which have the capacity to facilitate or act as barriers in relation to tailoring interventions using positive risk-taking. However, the scoping review has identified that risk management and positive risk-taking are not the explicit focus of any of the studies reviewed and this includes what potentially acts as facilitators or barriers to positive risk-taking.

2.8 Rationale for the plan of research

The absence of any explicit focus on risk management and what facilitates or inhibits positive risk-taking has implications for occupational therapy intermediate care practice, education, and research. Such deficits in knowledge are not conducive with providing evidence-based guidance to support occupational therapy practice and education including student fieldwork or facilitate a better understanding of risk or direct research in a high-profile area of practice. The scoping review has identified risk domains and characteristics; however, no single study has sought to understand the common areas of risk and what inhibits positive risk-taking from the perspectives of occupational therapists in clinical practice. Obtaining a clinical perspective of the common risks and positive risk-taking barriers is important as a first step to addressing this gap in knowledge and to direct this research programme.

Risk is multidimensional, dynamic, and assessing it is notoriously difficult, especially, in the context of how experiential differences can affect decision making. Observing such

phenomena at the right time and in the right context whilst capturing what is influencing decisions in clinical practice would present practical and ethical challenges making further research in this area very challenging, if not completely unachievable. This might explain why the scoping review has found a lack of risk related research or studies which have attempted to identify the strength of decisional factors in relation to risk and or present methodological solutions for researching these imperatives.

Using hypothetical scenarios in vignettes that reflect the risk challenges in occupational therapy intermediate care offers a potential solution to investigating risk related decision making without the aforementioned problems when conducting research in clinical practice. In quantitative research vignettes can provide a way to investigate participant perceptions to the information provided and intervals scales are often used to rate these responses. (Hughes and Huby, 2004).

The next part of this research programme will concentrate on investigating the common areas of risks and prevalent positive risk-taking barriers as perceived by experienced intermediate care occupational therapists. A consensus study by Nominal Group Technique (NGT) is an evaluative methodology and appropriate for this purpose. Triangulating the scoping review findings with a clinical perspective of the common areas of risk in occupational therapy intermediate care will help increase the credibility and validity across the studies

The culmination of the broad literature review in Chapter 1, the scoping review and NGT findings was used to inform the systematic construction of vignettes (hypothetical

narratives) that approximate risk prone clinical scenarios and include positive risk-taking barriers. Such an approach is conducive with judgement analysis methodology where participants are presented case scenarios which are based on the types and presentation of information that would occur in their natural environment (Harries & Harries, 2001 p.285). In this context, the natural environment would be an intermediate care setting where occupational therapy is provided and where occupational therapy students may be allocated fieldwork placements.

There is a gap in knowledge on how positive risk-taking barriers might affect decisions across different levels of occupational therapy experience. A factorial survey is a quasi-experimental method for collecting data on human judgements. In a factorial survey, vignettes can be used as a vehicle to present factors which are likely to occur singly or together at different levels of complexity or intensity.

Several positive risk-taking barriers within the vignette could be manipulated and systematically varied to assess their relative importance on respondents' decisions. Additionally, the sampling of participants could be directed at different levels of occupational therapy experience to assess whether experience (or lack thereof) has any influence on such decisions. To reflect this plan of action, three research aims and three objectives to meet these aims were constructed: -

2.8.1 Aims and objectives (Phase 2 & 3)

Aims

I. To investigate the common areas of risk and barriers to positive risk-taking from the perspective of experienced intermediate care occupational therapists
II. To construct hypothetical but true to life risk related scenarios which represent risk prone areas of occupational therapy intermediate care provision
III. To investigate the effect strength of positive risk-taking barriers across different levels of occupational therapy experience

Objectives

1. To address Aim (I). Employ a consensus study by Nominal Group Technique (NGT) to investigate the common areas of risk and positive risk-taking barriers in intermediate care from the perspective of experienced occupational therapists.
2. To address Aim (II). To construct vignettes, that portray hypothetical but true to life risk prone areas of practice.
3. To address Aim (III). Employ the vignettes as part of a factorial survey amongst Novices, Semi-experts, and Expert levels of occupational therapy experience to investigate the effect strength of positive risk-taking barriers.

Research Objectives 1 and 2 were conducted over Phase 2 and Objective 3 was conducted over Phase 3 of this research program.

In the next chapter, the ontological and epistemological perspectives of this research programme will be presented, before discussing the research assumptions which have informed Phase 2 and Phase 3 of this programme of research. Additionally, the NGT, vignette and factorial survey methodologies will be discussed in further detail.

Chapter Three – Philosophical perspectives and methodologies

3.1 Introduction

In the last chapter, the scoping review found ten common areas of risk and in relation to the amount of supporting literature, ‘Falls’ and ‘Discharge’ were found to be the most common risk domains. The next most common were identified to be ‘Practice errors’ and ‘ADLs’. Whilst the other risk domains did not have as much supporting literature, ‘Pressure care’, ‘Frailty management’, ‘Patient handling’, ‘Loneliness’, ‘Nutritional care’ and ‘Language barriers’ emphasise the heterogenous nature of risk in occupational therapy intermediate care. These risk domains have three prominent risk characteristics, ‘Risk awareness and identifying risk’, ‘Decision making under risk’ and ‘Improving safety’. These characteristics highlight a multitude of themes related to these risk domains, including being able to distinguish between the most and least relevant risk factors and recognise those which were empirically supported to help risk prediction. The decision-making process was found to be supported by risk assessment, tailored to a client’s culture, their environment, and or their specific condition (i.e., stroke). As such, this informed risk judgments and prevention strategies. Adopting a client centred approach was also found to be subject to how risk was viewed in the context of ethical considerations relating to safety and promoting a client’s autonomy. Moreover, organisational processes and approaches to therapy were found to influence these types of decisions.

The scoping review provides there are many risk related considerations in the provision of occupational therapy intermediate care. Moreover, the scoping review highlights that risk is a real concern where occupational therapists work to mitigate its affect, and this is a fundamental nature of reality in providing their services. Risk cannot be ignored as it poses

real danger when not addressed, however, what risk means cannot be fully understood in isolation from those that experience it. In this context, the association between risk being a reality and how its meaning is constructed is important to this programme of research and its philosophical approach. The philosophical viewpoint of research helps to understand actions, assumptions, and consequences and, therefore, acts as a conduit between research methodology, data generation and analysis.

In Chapter 2, the scoping review's (Phase 1) philosophical perspective of critical realism, that being risk is a real phenomenon and the research articles reviewed were found to be diverse using different epistemological and methodological perspectives. As such, the scoping review found a broad range of empirical studies, emphasising that knowledge creation relating to risk was not limited to one epistemological premise, theoretical perspective, or research methodology.

In this chapter, ontology and epistemology will be explained and examined in the context of research. Following this the ontology of risk will be examined and discussed in relation to how this has informed the research programmes epistemological perspective and its research methodologies. Moreover, this will link the researcher's (student) assumptions, highlighting the rationale for this research programmes methodologies and its aims and objectives as presented at the end of the last chapter.

3.2 Ontological perspectives

Ontology is concerned with what can be considered real. Neuman & Neuman (2014 p.94) define ontology as 'an area of philosophy that deals with the nature of being, or what

exists; the area of philosophy that asks what really is and what the fundamental categories of reality are.' There are two basic principles within ontology, and they are polarised viewpoints of reality, first, 'realism' denotes that the real world exists independently of human interpretation. Second, 'nominalism' asserts that reality is a by-product of human interpretations and inner subjectivity (Neuman & Neuman, 2014). Relativism is akin with nominalism as it also opposes 'realism' in that reality is composed in the mind and is inseparable from human perception and understanding (Hochberg, 2013). Bryman (2016) asserts that social ontology can be conceptualised into two main categories, those being objectivism and constructionism. An ontological 'objectivist' position provides that social phenomena, and its meanings exists independently of social actors. Alternatively, the ontological position of 'constructivism' asserts that social phenomena and their meanings are continually being accomplished by interaction within society. It implies that social phenomena are not only produced through social interaction but are in a constant state of revision (Bryman, 2016). A researcher's approach depends upon their assumptions about the world and how their research might contribute to knowledge. The ontological perspective in research can be considered as its starting point to which underpins the epistemological assumptions and investigation methods.

Risk can exist in multiple states, dormant until triggered or perceived by an observer. In this context, risk is a reality in healthcare provision, you don't have to be aware of it to be affected by it and it is also relative to the perspective of the observer who constructs its interpretation and meaning.

3.3 Risk Ontology

The scoping review highlights that risk is a real phenomenon where those accessing intermediate care engage in activity and this carries consequences (good or bad) to their health and wellbeing. The conditions which promote risk to take place to cause unfavourable consequences happen irrespective of human thought or perception, therefore, risk exists outside of how it is interpreted. Giacomini (2010) contends that healthcare research must establish whether the principle ontological question relates to phenomena that are deemed to exist, that is, they are real, independent, and not entirely comprised of thoughts and ideas. The central tenets of risk, uncertainty, harm and likelihood when considered in relation to healthcare can be viewed as part of an event or consequence of an event. They express ontological realism that specifies which states of the world (events) are to be conceptualised as risk. Therefore, it is the tenets of harm, likelihood and uncertainty that present risk to something of value (health and wellbeing) in the context of occupational therapy intermediate care and these can remain independent of thought constructions. Put another way, failing to identify a risk factor does not make it less real, or less or more harmful or probable to occur (Aven et al., 2011). Moreover, if this risk factor caused an adverse event, no one would dispute this was because it was not conceptualised into reality nor argue that the danger it posed was not real or could not be objectively considered.

Consequences of engaging with risk may fluctuate with a client's function and cause threats which are difficult to foresee and manage. The threat of being affected by these consequences, however, is real in the sense that people might suffer or lose their life once the risk manifests itself in an accident (Renn, 1998). Risk management refers to the process of reducing the risks to a level deemed tolerable by the client and the occupational therapist in relation to values which have socio-cultural relevance. In this context, risk

refers to a potential of 'real' consequences, which is both a social construction and a representation of reality (Renn, 1998). Burgess (2015) suggests that the very notion of risk is socially constructed and reflect society values, its surrounding culture which has a discursive influence on reality. Arnoldi (2009) states that risk is a social construction but requires the objectification of potential dangers and these can be viewed differently at different times. Stern et al. (1995) assert risk perception includes socialized cognitive patterns which work like filters in the evaluation of information about risks. From an ontological perspective, risk cannot be completely understood from either a staunch 'realism' or 'relativism' point of view.

Critical realism is an ontological branch between realism and relativism. Critical realism has three prominent ontological perspectives. First, 'the empirical', which refers to those aspects of reality that have been experienced. Second, 'the actual' which includes those aspects of reality that occur and are not necessarily experienced. Lastly, 'the real' which encompasses structures and mechanisms that generate phenomena (McEvoy & Richards, 2006). Fleetwood (2005) states that critical realism offers an alternative to social constructionist ontology (relativism) and to empirical realist ontology associated to positivism. Critical realists claim that an entity can (which does not mean it does) exist independently of our knowledge of it, as argued in this chapter in relation to risk. However, risk can be viewed as a social entity, in that, it is socially real with many causal mechanisms. Importantly, a critical realist's viewpoint allows that a social entity (risk) is dependent on human activity but is said to be real if it influences human behaviour, therefore, it is understood to be an aspect of reality that we can acquire knowledge about. Fleetwood (2005) suggests it is inappropriate to place complex social entities in ontological straightjackets. In this context, risk challenges traditional ontological

categorisation of realism and relativism, requiring a broader perspective of its existence as a phenomenon. This programme of research adopts a critical realist ontological perspective. In the next part of the chapter this perspective will be discussed in relation to epistemology and how this has informed the research programmes assumptions and methodologies.

3.4 Epistemological perspectives and assumptions

Epistemology is the theory of knowledge. It focuses upon how do we know what we know and how did we go about knowing it (Finlay & Ballinger, 2006). It covers the broad concept of knowledge including its acquisition, its limits, methods of enquiry and the cognitive process that interpret it, such as, our sensory input, perceptions, memory, beliefs and cultural contexts (McIntosh-Scott et al., 2013).

Epistemology is important because it influences how researchers frame their research in their attempts to discover knowledge. As a next step (Phase 2), it is important to this programme of research to establish the common areas of risk and barriers to positive risk-taking as experienced by intermediate care occupational therapists. In this respect, knowledge acquisition is inductive, 'value laden' and contextually unique, that is, the focus is purely on intermediate care provision. As such the theoretical perspective that seeks to understand phenomenon (risk) through experience is in this context more appropriate to that of one which seeks to predict or observe. Therefore, this denotes a social constructivist approach to understand the reality of dealing with risk in practice from those that have experienced it.

Social constructionism and interpretative paradigms have emerged as important perspectives within social science and have become predominant in some areas. The premise is that phenomena is socially constructed and, therefore, there is a rejection of positivism and its notion that there is one reality which can be objectively measured. Different observers can build different interpretations and explanations of the same phenomenon. This premise is important as establishing the common areas of risk and positive risk-taking barriers in occupational therapy intermediate care must include multiple opinions and perspectives to fully understand how this is experienced in practice.

Social constructionism methodologies have developed that reinforce and build upon previous knowledge as opposed to generating new knowledge (McIntosh-Scott et al., 2013). This can be contingent and discursive in nature and foregoes any predication that an absolute truth or universally accepted knowledge can be obtained (Jørgensen & Phillips, 2002). This does not easily translate from a scientific and or political perspective, as a result is one of potential many others which complicates determining or falsifying a truth about a phenomenon. Jørgensen & Phillips (2002) assert that realistically this has no political capital because it cannot determine what is good or bad in a world where interpretation is not the prime medium of validity. This supports that determining the nature of risk, its scope and its impact in relation to providing occupational therapy intermediate care requires other theoretical perspectives other than those that support interpretivist approaches (i.e., positivism, or post-positivism perspectives).

Arguably, it is important to understand risk from those that experience it but by the same token this approach is not conducive with estimating or evaluating its potential effect with accuracy or using this information to support risk prediction. In short, a social

constructivist would not assume a deductive, 'value free' approach or be focused on generalisation to infer the wider causal impacts of risk in society. In the context of investigating the common areas of risk and positive risk-taking barriers from a clinical perspective, this programme of research will move from an inductive to a deductive approach. Put differently, using the information which has been acquired through an inductive investigation will facilitate hypothesis creation which will then be tested. Using a deductive approach is conducive with the ontological perspective of critical realism and post positivism approaches and is necessary to investigate the effect strength of positive risk-taking barriers across different levels of occupational therapy experience in accordance with the final aim of this research programme.

Empiricism and positivism are terms associated with scientific enquiry that reject non-factual methods in favour of a pragmatic approach using valid measurement tools and approaches to collect evidence (McIntosh-Scott et al., 2013). Positivism is the dominant paradigm in scientific enquiry because of its emphasis on description, explanation and empirical facts (McIntosh-Scott et al., 2013). Positivism came under increased criticism in the mid-20th century from social researchers. These critiques included the exclusion of qualitative methodologies, the limitation placed on study choice, study aims limited to causality and fundamental laws, self-serving in its operationalisation, reductionist and saw the researcher as independent without bias. These criticisms gave rise to post positivism which sought to introduce and amend some of the positivism assumptions (McIntosh-Scott et al., 2013).

Two of the most prominent forms of post positivism are critical realism and social constructionism (Cruickshank, 2012). Post-positivism shared many ideals of positivism,

those being, research should be based on careful observation and measurements. Alike social constructionism there was a belief that absolute truth cannot be found, and that evidence is imperfect and fallible (Holt, 2009). Critical realists reject positivism, however, they do adhere to the notion that knowledge may be positively applied (Cruickshank, 2012). Moreover, critical realists argue that the choice of methods should be dictated by the nature of the research problem. In many cases it is suggested that the most effective approach will be to use a combination of quantitative and qualitative methods or techniques. Arguably, the most important aspect of the critical realism paradigm is in terms of how research methodologies are used (McEvoy & Richards, 2006). McEvoy & Richards (2006) assert quantitative methods are conducive with critical realism when they develop reliable descriptions and provide accurate comparisons that can identify patterns and associations that may otherwise be masked. Put differently, they can tease out new and unexpected causal mechanisms. In this context, this would be useful in relation to investigating the effect strength of positive risk-taking barriers across different levels of experience to highlight new and useful knowledge.

From a critical realism perspective, the key strength of qualitative research is that it is open ended. This facilitates complex concepts and relationships to be identified that are unlikely to be captured by predetermined response categories or standardised quantitative measures. Archer et al. (2016) applies aspects of social judgement to a critical realist approach, in that, judgement rationality and relativism can be accommodated within the critical realism paradigm. Critical realism ontology includes aspects of ‘real’ and ‘experienced’. Epistemologically, this aligns with logic-based rationality and with the social context in relativism found in judgment theory. Archer et al. (2016) contend that despite the relativistic nature of judgment, a critical idealism perspective can provide a better model

for understanding. Additionally, objective reasons for judgment can be understood and put forward; this offers the possibility that, over time, we can improve our knowledge about how judgements are made in the real world (Archer et al., 2016).

In summary, this programme of research is based upon the ontological premise of critical realism, in that risk is a real phenomenon and universally accepted as such in occupational therapy. However, its meaning is subject to social constructions by those who experience it in this context. From an epistemological viewpoint, knowledge of risk can involve multiple realities which bring together post positivism and social construction under critical realism ontology. These assumptions emphasise the importance of using mixed methods (qualitative and quantitative approaches) to conduct this programme of research.

3.5 Methodological framework and rationale

Finlay & Ballinger (2006 p.260) define research methodology as an '…approach to the research endeavour, underpinned by theoretical and philosophical ideas, determining the focus of the study, methods to be employed, form of analysis and how the researcher views their own position and role.' In this context, the ontological premise of critical realism underpins this research programme, which is conducive with social constructionist and post positivist approaches. This offers this research programme a degree of flexibility and to be pragmatic in its direction to determine the most suitable qualitative or quantitive methods that align with the critical realism perspective. Establishing these imperatives is important to design, conduct, analyse and interpret the research findings. Moreover, it provides a logical link between the ontological and methodological perspectives and will help the researchers (student) awareness in relation to conducting this research.

3.5.1 Phase 2 (Consensus study & vignette production)

The research activities in Phase 2 of this research programme included a consensus study using a Nominal Group Technique (NGT) and a process to produce and validate a series of vignettes for Phase 3. The aim of the NGT was to establish the common areas of risk and positive risk-taking barriers in occupational therapy intermediate care. This information, combined with the findings from the scoping review, would be essential to vignette construction.

In this part of the chapter, the NGT methodology will be introduced and the rationale for employing such an approach will be discussed in relation to its capacity to provide cues of information (including risk factors) for vignette construction and its advantages over other group study methods. Specifically, it will examine the strengths and weaknesses of interviewing participants individually, focus group methods and Delphi group techniques, which were all considered and discounted in favour of employing an NGT.

Van de Ven & Delbecq (1972) developed the Nominal Group Technique (NGT) in the late 1960's to bring about a process of equitable and focused decision making to group discussion. The NGT is an evaluative methodology (Lennon et al., 2012). Perry & Linsley (2006) describe a NGT as semi quantitative and qualitative, in which responses from participants are based on a single question. Lennon et al. (2012) asserts that an NGT offers valuable methods for addressing complex qualitative subjects and highlights the decision-making process in reaching consensus. A NGT's findings can be presented quantitatively using descriptive statistics and qualitatively by offering explanation to support the findings.

Using qualitative and quantitative approaches to investigate multiple perspectives on a phenomenon (risk) is congruent with a critical realist perspective.

An NGT is used in research as a structured procedure to gather information from a group of people that have knowledge of a particular subject of interest (Gallagher et al., 1993). The NGT requires direct participant involvement, which is non-hierarchical to promote an equal voice of each participant within the group (Lennon et al., 2012). Its purpose is to focus thought to generate ideas, discuss them and ranked them by the group, thereby, reaching a consensus (Gallagher et al., 1993).

Intrinsic and extrinsic hazards and risks (decisional factors) are thought about in occupational therapy intermediate care in terms of their impact on a client. This is achieved through an assessment to objectify the likelihood of one or more of these factors occurring and what level of harm they may pose. If there is an uncertainty to whether a harm may occur in relation to an action (or inaction) then there is a risk. In this context, risk can come in many variations including but not limited to those relating to a client or political, economic or cultural barrier not conducive with reducing risk or promoting safe practice. Some of these (when assessed) will become risk factors and present different levels of uncertainty and harm. Therefore, it is rational to think about risk factors in terms of a hierarchy, as not all carry the same weight of harm, likelihood (uncertainty) in the context of occupational therapy intermediate care for older adults receiving these services. In the initial stage of Phase 2 of this research programme it was important to evaluate and to reach agreement on the most prevalent risks and positive risk-taking barriers in service provision. Other research methods were considered, interviewing, focus groups and Delphi

techniques, these will now be discussed juxtaposing these approaches with NGT methodology.

In conceiving the study design for Phase 2, qualitative interviews were considered in order to investigate the common areas of risk and positive risk-taking barriers encountered by intermediate care occupational therapists. Interviews in qualitative research are the most common type of method used to collect data (Jamshed, 2014) and most interviews are either lightly structured, semi structured or in depth (Mason, 2002). Semi-structured interviews are designed so that the respondents answer pre-set open-ended questions and thus are widely employed by different healthcare professionals in their research (Mason, 2002).

To facilitate this the interviewer uses an interview guide as a schematic presentation of questions or topics to explore with the participants (Mason, 2002). An interview guide can provide a systematic process between one or more interviews to comprehensively explore the topics with the respondents whilst providing direction and a focused line of questioning (DiCicco-Bloom and Crabtree, 2006). Semi-structured interviewing can be a powerful tool for health researchers to use to understand the thoughts, beliefs, and experiences of individuals (Mason, 2002). However, there are notable disadvantages in that interviewing can become intimidating and take on an interrogative style, especially, for researchers who are less familiar with qualitative approaches (DeJonckheere and Vaughn, 2019). Whilst their use can generate rich in depth data, Osborn (cited in Delbecq et al., 1975 p.16) in relation to brainstorming ideas in problem solving, posited, '…the average person can think up twice as many ideas when working with a group than working alone.' A possible explanation for this can be linked to how cues develop from stimuli in diagnostic reasoning

and that the more stimuli (ideas being generated) a person is subjected to is likely to invoke cues from long term memory (Robertson, 2012) beyond that of what a single interviewer can generate. Idea generation was an important requirement for Phase 2 of this research programme and an NGT facilitates this and incorporates group interaction and discussion for clarification and evaluation.

Whilst there are many ways in which brainstorming can be employed in research, Delbecq et al. (1975) assert the NGT has received the greatest interest as it allows people to work together but generate their ideas individually. Additionally, there are some empirical findings that support that a NGT versus fully interactive groups produce superior results against three metrics, those being, the average number of unique ideas, the average number of total ideas and the quality of the ideas produced (Delbecq et al., 1975). Despite this it is important to differentiate between groups that are required to generate information on a problem creatively and groups where information is sought from a task or situation known to them. With regards to the latter interacting groups have been found to be superior in objectives involving attitude change, team building and consensus (Delbecq et al., 1975).

In an NGT this is done in a controlled fashion, and it minimises several critical problems associated with group interaction as seen in focus group studies. Specifically, these problems are where the group discussion succumbs to the influence of a few individuals owing to status or personality and / or the problems associated with establishing and maintaining social relationships within a group. One advantage of an NGT is that it avoids traditional problems of group interaction associated with dominant personalities within group meetings (Gallagher et al., 1993). Dalkey & Helmer (1963) assert that qualitative methods such as focus groups can be used for evaluative purposes but also suffer from

dominance of those perceived to have high status in their discussion. Additionally, such methods limit and inhibit idea generation which can be caused by a lack of focus or the over attention to a single idea.

A Delphi technique completely avoids the pitfalls of group interaction as this method does not require the participants to meet. A Delphi technique alike the NGT shares many similar processes, including, individual idea generation, pooled information, an evaluation of the data collected and statistical analysis of the results (Delbecq et al., 1975). The major differences are that the Delphi approach is conducted remotely and anonymously via questionnaires and feedback reports and therefore does not facilitate any group communication or interaction. Van de Ven (1974, cited in Delbecq et al., 1975 p.21) found that the total absence of interpersonal relationships inhibits task performance because of the lack of verbal clarification or comment on ideas in the feedback stage of the process. By contrast, a NGT facilitates a balanced orientation among group members between the task and the social-emotional concerns in group interaction (Delbecq et al., 1975). Van de Ven (1974, cited in Delbecq et al., 1975 p.22) in their comparison between NGT, Delphi and interacting group processes found participant satisfaction was significantly greater in the NGT than in either the Delphi process or where full interaction was facilitated.

Despite its popularity, the NGT methodology has attracted criticism (Lennon et al., 2012). The size and composition of the group involved and the fact that the NGT is normally focused on a single topic discussion may limit its findings. Moreover, the rigidity and formality of the NGT process may cause resistance to its methods, especially, the allotted timescales maybe problematic for both the participants and researcher (Davidson et al., 2005; Peña et al., 2012; Steward, 2001; Thomas, 1983; Tuffrey-Wijne et al., 2007).

Moreover, the NGT may fail to capture the depth and richness of qualitative data and quantitative analysis is normally limited to descriptive statistics.

The NGT's methodological strength is that it can evaluate complex phenomena such as risk, focusing on a particular aspect (common risks and positive risk-taking barriers), to obtain multiple perspectives and gauge attitudes so that agreement can be reached whilst its controlled structure avoids group bias. As such, this aligned with the research aim and negated using any other research methodology. Using interviews or focus groups to establish rich qualitative data was not needed to identify the common areas of risk and prominent positive risk-taking barriers in occupational therapy intermediate care. However, it was important to include group interaction to provide stimuli (cues) for others to trigger their own ideas and thoughts and this ruled out using a Delphi approach.

In summary, the NGT was the most appropriate methodology to answer the research questions as it facilitates a controlled group interaction to stimulate the participants experiences through cue generation. The NGT also focuses on a single question and rates the participant responses to provide a hierarchy of agreement and in relation to answering the research question an in-depth qualitative investigation was not required. Ultimately, the NGT methodology shares many of the positive aspects of interview, Delphi technique and focus group approaches by offering a structured and systematic way of obtaining information using individual and group approaches without many of the disadvantages associated with these individual methods. Additionally, the NGT and scoping review findings were triangulated to identify the most relevant factors and risk prone areas of occupational therapy intermediate care provision for vignette construction.

In this part of the chapter, vignette methodology will be discussed in relation to the challenges of investigating risk related decisions and how this is a problematic area for research. Moreover, the rationale for adopting a vignette-based approach and advantages and disadvantages with its methodology will be discussed in relation to studying risk.

Vignette-based methodologies are frequently used to examine judgments and decision-making processes, including clinical judgments made by healthcare professionals (Evans et al., 2015). Atzmüller & Steiner (2010 p.128) define a vignette as 'a short, carefully constructed description of a person, object, or situation, representing a systematic combination of characteristics.'

Vignette methodology offered an ethical and practical approach to investigating positive risk-taking barriers at different levels of occupational therapy experience. There were practical challenges in investigating positive risk-taking in occupational therapy intermediate care related to its complexity and breadth of potential areas of investigatory focus. This extends to the identification of the research problem, formation of the research question/aim, and selecting an appropriate methodology and research design (Khankeh et al., 2015). In this context, decisions about study design had to be balanced with inevitable monetary and time constraints within the framework of this research program. Using vignettes for a factorial survey (Phase 3) to approximate clinical situations which would not be readily accessible for research purposes whilst avoiding, practical, ethical, monetary and time implications was a key and important aspect of this research programme. In this part of the chapter this will now be discussed in relation to occupational therapy professional conduct and ethical guidance and research policy.

Vignettes replicate real life situations as hypothetical scenarios making them effective tools to investigate areas of decision making which are difficult to observe in the real world (Hughes & Huby, 2004; Taylor, 2005). In Chapter 1, the complexity of risk related decision making was discussed alluding to its multifactorial nature which may have moral and ethical overtones where reasoning and decision making in this context differs according to a person's level of expertise. In Chapter 2, the scoping review identified ten risk domains with many themes relating to the awareness and identification of risk, ethical reasoning and decision making in risk prone areas like 'Falls' and 'Discharge', emphasising the importance to conform to a standard of conduct, especially in the context of researching these aspects of practice.

It is not ethical to be implicit or allow risks to be realised for the sake of research. Moreover, ethical principles in research protect participant rights and welfare and these cannot be breached. The UK policy framework for health and social care research sets out principles of good practice in the management and conduct of health and social care research that take account of legal requirements and other standards. Principle 1 emphasises participant safety as a primary concern: -

> 'The safety and well-being of the individual prevail over the interests of science and society.'
>
> (NHS Health Research Authority, 2022)

In this context, observing risk in practice for research purposes, that being, observing potential harm or harm resulting from a risk would not be conducive with prioritising a

participant's safety first. Nonadherence would constitute misconduct in relation to Occupational Therapy's Code of Ethics and Professional Conduct, section 6.1.6 states: -

> 'When undertaking any form of research activity, you must protect the interests of service users, fellow researchers and others.'
>
> (COT, 2015 p.38)

Vignettes can be used in many types of social research including longitudinal studies, cross cultural research and comparative research between groups of professional and service users (Hughes & Huby, 2004). Moreover, vignettes are used in experimental and non-experimental methodologies. Taylor (2005) asserts that experimental methods of investigating decision making tend to be constrained by practical and ethical difficulties, whilst questions about internal validity and generalisability surround qualitative and descriptive methods. Aguinis & Bradley (2014) contend experimental vignette methodology as used in a factorial survey is a useful way to address the issues of internal versus external validity. In this context, employing true to life vignettes with the robustness of experimental design in combination with generalisation potential in factorial survey methodology provided rationale and direction for the Phase 2 and Phase 3 study designs.

Hughes & Huby (2004) contend vignette construction is guided by the research question being posed, research topics, participant group together with the researcher's philosophical perspective of the nature of phenomena under study. In this respect critical realism allows multiple perspectives of reality pertaining to a social entity (risk) providing reality can only be understood (captured) from a broad critical examination. The philosophical standpoint in this study is that risk is a real phenomenon in intermediate care occupational therapy

provision. Factors to risk related decisions are given weight and priority and they are ordered according to the value an individual attaches to them. Importantly, this aligns with how factors can be measured and highlights a vignette-based factorial survey as an appropriate and robust approach for this research programme in relation to its aims. In contrast, using such an approach will not provide a deep understanding of the social and cultural conditions explaining each factors effect strength from an individual's perspective as possible within a qualitative study. However, it presents a logical approach for establishing effect strength as a first step to focus further research, including the potential for qualitative triangulation to provide a richer understanding of the practice conditions nurturing and causing such viewpoints and attitudes.

3.5.2 Phase 3 (Factorial survey)

The ontological perspective of critical realism and post positivism epistemology underpin the methodological perspective of factorial survey design. A factorial survey uses vignettes which have been constructed from the experiences of intermediate care occupational therapists (NGT findings) to closely approximate real life. As a factorial survey focuses on how factors within the vignette effect one or more decisions relating to the vignette scenario, this relationship can be measured and therefore objectified statistically. This approach is akin with post-positivism and its scope to employ qualitative (NGT) and quantitative (factorial survey) methodologies to understand complex phenomena, such as risk.

Understanding the direction and nature of causal relationships is the cornerstone of science (Cook et al., 2002). This helps explain and expresses phenomena in a manner which is not

constrained by or subject to the necessity of experiencing it. As such, this impresses the importance of objectively measuring phenomena (risk) so that its meaning, scope and potential impact can be understood more broadly and beyond individual experience. An important aspect of quantitative research is objectivity, and therefore researchers using quantitative methods must believe that the subject of interest can be objectively measured given the appropriate instruments and conditions (Holt, 2009). A vignette-based factorial survey provides the appropriate instruments and conditions, however, it must meet the requirements of any credible research method used to establish knowledge deductively. Taylor (2005) asserts these requirements are, validity in regard to the vignettes and the theoretical anticipated patterns of decisions, reliability by establishing test and retest repeatability and robustness of design, especially, regarding the independence of the factors studied.

A factorial survey uses a quantitative approach. Quantitative research is the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect (Sukamolson, 2007). Post-positivists believe explaining phenomena in this context is imperfect, for this reason quantitative researchers do not seek to prove a hypothesis but instead present evidence to accept or reject it (Holt, 2009). The last study in this programme of research (factorial survey) will use survey and experimental methodology which are synonymous with the quantitative research paradigm. The aim of a survey is to collect data from a large number of people based on specific characteristics and examine the data for similarities and differences (Holt, 2009). The aim of an experimental design is to investigate the relationship between two or more variables by deliberately changing one or more of these variables and examining their effect on each other (Sukamolson, 2007).

A factorial design involves experimental method in which the researcher constructs some descriptions of similar situations, which will be judged by respondents under a particular aspect (Dulmer, 2007). Rossi & Nock (1982) were integral in developing the factorial survey, essentially, transferring the basic principles of factorial design (experimentally using multiple factors to determine an effect on a dependent variable) into a survey to create a distinct research method. A factorial survey combines the advantages of experimental design with survey research methods and is used to study judgments, decision making and or concept definition (Ludwick et al., 2004). Specifically, it combines random assignment inherent in experimental method with the generalisability advantages of survey design, those being, the potential to incorporate large and random samples (Ludwick et al., 2004).

Factors within vignettes are the essential elements of the experimental design and as independent variables they are presented to the decision maker in a controlled and randomised method (Taylor, 2005). The factors can be measured against a decision outcome, otherwise known as the dependent variable. Subject to responding to an appropriate number of vignettes it becomes possible to estimate the weight assigned by each individual to the different vignette characteristics (factors) by regressing these factors against changes in the scale used to detect the decisional outcomes (dependent variables). It is possible to infer a causal explanation, i.e., that the factors actually cause the change in the decision, rather than merely being associated with it by 'accident' (Taylor, 2005). From a critical realist perspective, this is conducive with post positivism which serves to explain a causal relationship rather than maintaining that there is an absolute truth.

An essential component of the factorial survey is that the collection of subjective viewpoints at different levels of experience could indicate group difference in relation to the effect of the positive risk-taking barriers. Expert risk perceptions are known to differ in comparison to lay people and novices (Rowe & Wright, 2001; Thomson et al., 2004). A factorial survey offers a robust method to study the effect of positive risk-taking barriers on different levels of occupational therapy experience to establish which barriers have the most effect strength in each group.

Factorial survey methodology also provides a means to embed factors that are implicit in the vignettes so that the respondent is not asked directly about their effect on their decision. This mitigates bias, as respondents tend to present their decisions in the best light possible, especially when asked explicitly about factors which could be considered contentious to delivering person centred care. This bias may be less of an issue for a decision scenario that is realistic but not real life, that being, real life decisions for which they are accountable (Taylor, 2005). Larson (2018) asserts that the idea of providing a more acceptable answer is linked to social desirability bias which can impact any research where participants want to create the right impression or feel good about themselves. Moreover, making positive risk-taking decisions with older adults receiving occupational therapy intermediate care is multifaceted. It has many moral and ethical considerations potentially invoking strong feelings. This can affect participant responses as they may convey what they aspire to do rather than indicating the true reality of how factors (positive risk-taking barriers) influence their decisions. Together with a factorial survey's capacity to randomise factors as part of its experimental design and potential for generalisation of its findings provided a good methodological fit for the Phase 3 study.

3.6 Chapter summary

This chapter has discussed the philosophical underpinnings of its research relating it to Phase 2 and Phase 3 of this research programme (NGT, vignette construction & factorial survey) to understand their assumptions and the strengths and limitations of their methodologies. This has included the ontological perspective of risk, that being, it is a real phenomenon which affects decision making whilst also contending that its impact and relevance within society and to individuals are largely owing to social and cultural conditions which are not static. As a result, risk research should not be reduced to one stanch philosophical orientation and that multiple perspectives and research methodologies are necessary. This emphasises the importance to adopting a critical realism perspective throughout this programme of research.

An important assumption is that there is not one universal truth, and that risk is a subjective concept and therefore its likelihood and severity are in the mind of the assessor only. This has to be balanced with the fact that risk assessment is a process of objectifying risk, and this must be done before positive risk-taking can be employed. Objectification can only be done when phenomena are real (experienced and understood by others) and this presents an opportunity to measure the effect of positive risk-taking barriers to objectify their effect strength on different levels of occupational therapy experience. It is also important to recognise a critical realist perspective is advantageous to adopting an open and flexible approach. It facilitates a broad view of investigation, specifically, with regards to its methodologies and interpretations of its findings. This is understood in relation to these methodologies being socially constructed and that all of the components from establishing research methods to interpreting findings are subject to and influenced

by social and cultural conditions. Multiple realities, meanings and explanations of risk are inevitable in this context. Critical realism ontology allows for such perspectives and as part of post positivistic approaches there is scope to employ both qualitative and quantitative methods.

This chapter has presented and discussed, NGT, vignette and factorial survey methodologies emphasising their merits in relation to their individual approaches, their advantages over other research methods and how they complement each other and are appropriate to investigate risk related decision making when there are challenging decisional factors (positive risk-taking barriers) in an occupational therapy intermediate care context. Moreover, this part of the chapter has highlighted, the Phase 1 (scoping review), Phase 2 (NGT, vignette design and production) and Phase 3 (factorial survey) are methodologically well suited to identify relevant decisional factors and to measure the effect strength of these factors as part of occupational therapy risk related decision making.

The next phase (Phase 2) of this research starts with a consensus study by Nominal Group Technique (NGT) to investigate the common areas of risk and positive risk-taking barriers from an occupational therapy intermediate care perspective. This study will be presented and discussed in the next chapter. The last stage of Phase 2 (Vignette design and production) will be presented in the following chapter.

Chapter Four – A consensus study by Nominal Group Technique (NGT) to investigate the common areas of risk and barriers to positive risk-taking in occupational therapy intermediate care

4.1 Introduction

This chapter marks the start of Phase 2 of this programme of research which began with a Nominal Group Technique (NGT) study. This chapter will outline the NGT methods and its findings before discussing how this information was used for the next stage (vignette construction) of this project.

The scoping review identified ten risk domains with 'Falls and 'Discharge' being the most common. In the scoping review's risk characteristics, it was apparent that occupational therapists must engage with risk and have awareness of risk factors which have been found to be empirically relevant so that risk prediction, assessment and positive risk-taking can be employed. However, the scoping review also found a paucity of literature relating to risk in occupational therapy intermediate care provision, and this includes a lack of empirical study of the attitudes and perceptions of risk from those that have experienced it. Therefore, there is a gap in knowledge relating to the most prevalent risks in occupational therapy intermediate care service provision and what might inhibit risk strategies, like positive risk-taking.

As a next step in this programme of research it was advantageous to investigate the opinions of occupational therapists when the subject of risk is made the focal point and is the explicit phenomenon of interest. This includes what occupational therapists believed to be the common areas of risk and positive risk-taking barriers in the provision of occupational therapy intermediate care. This information provided a clinical perspective, and the data was triangulated with the scoping review and used in vignette production and design as discussed in the next chapter.

In the previous chapter, the NGT methodology was discussed in relation to other research approaches, discounting interviewing, Delphi techniques and focus group approaches. It also highlighted the NGT as an integral approach to obtaining a clinical viewpoint to support the scoping review findings in relation to the common areas of risk in occupational therapy intermediate care. The NGT also offers an opportunity to identify positive risk-taking barriers to fill that gap in knowledge identified in the scoping review. In addition, the NGT will support vignette construction as required for the planned factorial survey (Phase 3) this emphasises its overall importance to the research programme. In the first part of this chapter the NGT's aim (research questions), methods, results and discussion will be presented before triangulating its findings with the scoping review to highlight its implications for this programme of research.

4.2 Aim and objectives

The aim of this study was to investigate and gain consensus on the common areas of risk and barriers to positive risk-taking as experienced by intermediate care occupational therapists. Two research questions were formulated, informed by the findings of the scoping review and discussed during supervisory meetings.

4.2.1 The research questions

1. What are the most common risks associated with older persons, accessing home based, reablement, bed-based and crisis response services?
2. What prevents positive risk-taking with older persons, accessing home based, reablement, bed-based and crisis response services?

The following objectives were conceived in order to meet the research aim and address the research questions: -

- To recruit participants from the Royal College of Occupational Therapists Specialist Section – Older People (RCOTSS-OP) with experience in the delivery of home based, reablement, bed-based and crisis response services
- To use a Nominal Group Technique (NGT), remotely via video conferencing software, to investigate and gain consensus on the common areas of risk and barriers to positive risk-taking in intermediate care from the perspective of occupational therapists

4.3 Method

It is generally accepted there are 5 stages in an NGT: silent reflection, round robin, clarification, ranking and focus reflection. The group is directed through the stages, starting with an opportunity to generate their own individual ideas, before presenting them and clarifying them in group discussion. After wording and concepts are clarified, the group can rank them from their own personal perspective before a plenary stage to discuss and reflect on the consensus of the findings (Lennon et al., 2012).

Gallagher et al. (1993) assert there are two initial but essential components of a NGT, first, the selection of a sample of people who have experience, expertise and insight into the problem being explored. Second, there is a need to develop an appropriate question for the nominal group to address. The research questions evolved as a result of the scoping review

findings and supervision discussions. In relation to sampling those with expertise, The RCOT Specialist Section - Older People (RCOTSS-OP) was used for recruitment who provide professional and clinical information on all aspects of occupational therapy practice related to older people. The RCOTSS-OP members have experience in acute and emergency care; care homes network; dementia and older peoples mental health; falls and intermediate care and reablement.

4.3.1 Participant recruitment

The researcher (student) is a member of the RCOTSS-OP and was able to access other members for recruitment purposes via RCOT's Research and Development department. This study required participants with current working experience in one or more of the intermediate care service models, those being, home-based, bed-based, reablement and crisis response services. The RCOTSS-OP includes members that have experience and background in these services and at the time of this study their subscribers amounted to 266 members.

4.3.2 Sampling strategy

Harvey and Holmes (2012) suggest that a group of between 6 to 12 participants is an ideal sample size for an NGT study. In light that this research was going to be delivered remotely via video conferencing the sample size was restricted to 10 participants. A participant recruitment email was constructed and sent to the RCOT Research and Development administrator to circulate it to the RCOTSS-OP members, see Appendix 1.

The recruitment email gave an overview of the study, its purpose, timings and the participant inclusion criteria.

A purposive sampling strategy was used to recruit a maximum of ten members subject to inclusion criteria and where possible to ensure an equal representation of experience between the intermediate care services. The inclusion criteria for the NGT study were that participants must have 3 or more years of experience as a post registered occupational therapist and this experience must be focused in the care of older people accessing home-based, bed based, reablement and crisis response services. In line with the RCOT Research and Development administrator's instruction, participant information and consent forms were only sent to the members who responded to the initial participant recruitment email. In the event that more respondents expressed an interest than required for the study an email would be sent advising them of this and to inform them that there offer of participation would be considered in lieu of any respondents withdrawing up to two weeks before the study date. Additionally, the participant information sheet (PIS) informed the participants that the study would be conducted outside of normal working day hours (9-5pm) as not to conflict with employer or client commitments, as per this study's ethical approval.

4.3.3 Participant Information sheets and consent

The purpose of the participant information sheet (PIS) is to provide clear, accessible, and sufficient information to a prospective research volunteer. The content should include a range of relevant information so that an informed decision whether to participate in the research can be made and confirmed on a consent form. PIS's were developed in

accordance with the Northumbria University Ethics and Governance guidance (Northumbria University, 2020). They were constructed using plain language to communicate the purpose of the research, the study's aim and objectives and to detail what the participants would be asked to do, see Appendix 2.

The consent form included the project title, the name of the principal investigator, five statements written in the first person with 'tick boxes' for the respondent to confirm their consent and a place for the participant and researcher to sign and date, see Appendix 3. Those that expressed an interest in the study was set the PIS, consent form, participant experience form and a participant ranking sheet. Except for the consent form, the PIS, participant experience form and participant ranking sheet were anonymised.

4.3.4 Participant experience and ranking sheets

A participant experience form was designed so that the participant did not have to write or type lots of information. This was facilitated by including statements with 'tick boxes' to confirm their intermediate care areas of experience, see Appendix 4. The information sought was the participant's current role or job title, whether they were a post registered occupational therapist, how long they had been an occupational therapist and what intermediate care practice settings they had experience of. Additionally, an 'other services' experience section was included for those services that involved providing occupational therapy to older age groups but perhaps bridged the main intermediate care services or were named differently.

A participant ranking sheet was created as a data collection tool, see Appendix 5. Delbecq et al. (1975) contend NGT's can employ more refined methods of voting techniques and data collection, such as using rating scales. Ratings scales can be used where there is a need for more judgmental accuracy or where there is a large number of ideas generated and, therefore, a large amount of information for the participants to process (Delbecq et al., 1975). This study anticipated that there could be a large amount of data produced and would need a process and data collection tool to reduce the cognitive burden on the participants. Additionally, this study required a data collection tool that could provide a means to rank the ideas generated with mathematical accuracy in line with the studies aim and objectives to produce a quantifiable hierarchy of results.

The participant ranking sheet was constructed using a 5-point Likert type scale. A Likert scale is a well-used psychometric tool to explore subjective attitudes, opinions and perceptions and transform them into objectifiable quantities (Joshi et al., 2015). The construction of Likert (or Likert type) scale is rooted into the aim of the research (Joshi et al., 2015). The purpose of the scale was to quantify the frequency of how the participants viewed the areas of risk and positive risk-taking barriers from the individual ideas generated and discussed within the group. The 5-point Likert scale uses a linear continuum of mutually exclusive options which a participant can select to describe a dimension of a phenomena (Joshi et al., 2015). The options were presented in a linear format which included 'Rare', 'Very Uncommon', 'Occasionally', 'Common', and 'Very Common' dimensions. An important consideration in deciding to use a 5-point scale was that it entailed enough options in the continuum, thereby, further dimensions were not required to produce more sensitivity for the respondent to answer against (Joshi et al., 2015). Construction of the scale and participant ranking sheet was discussed at supervisory

meetings and was an iterative process. The design included a grid format for the participants to type or write the risk component they were ranking and to place an ‘X’ against the scale to indicate how common they thought the phenomena/item was. As such, the participant ranking sheet could be used for each NGT activity to rank the ideas generated for both research questions.

4.3.5 Remote delivery

The NGT was originally conceived as a face-to-face research method. Delbecq et al. (1975) suggest there are three main preparatory stages which are, choosing an appropriate meeting room, ensuring there is sufficient stationary for the participants to use and presenting an open statement. In relation to providing an appropriate meeting room, this study was conducted remotely, however, various video conferencing platforms were considered. In this context a video conferencing platform which could provide real time video communication between all participants and facilitators was the foremost consideration. The primary facilitator was the researcher (student) and the second facilitator was one of the students supervisors. Other essential features included, a virtual white board and post it notes (virtual sticky notes) for the participants or facilitators to type on. It was necessary for white board and post it notes to be viewable by all participants in real time. Additionally, it was also preferable that any video conferencing platform had the scope to open other applications including document viewing capabilities that could be used in the introduction (opening statement).

Based on these requirements and Northumbria University’s instruction on which video conferencing platforms were considered secure and stable for research, Microsoft Teams

was chosen for this study. Meeting invites were sent to all participants using Microsoft Outlook calendar/email, two weeks prior to the study date. The study was conceived as two separate NGT's grouped together as one activity, the first NGT would answer the first research question and the second NGT would answer the second research question, both of which were separated by a break, see Table 8.

Table 8. NGT activities

	Introduction
Question 1	Silent reflection
	Round robin
	Group discussion/clarification
	Ranking/voting
	Break
Question 2	Silent reflection
	Round robin
	Group discussion/clarification
	Ranking/voting
	Conclusion

The NGT introduction and opening information was presented upon all participants joining the Microsoft Teams meeting remotely via their own digital screening devices (DSE). Upon receiving members into the group audio and visual components were checked to confirm the DSE's were working, and communication was possible. In relation to an NGT introduction, Delbecq et al. (1975) assert it is important to address why the group has been formed, as individual perceptions change when groups are brought together for

congeniality as opposed to assembling groups because of their expertise in problem solving. Microsoft PowerPoint was used to present a series of slides which were viewable to all participants using the Microsoft Teams document sharing function. This information included a grateful welcome by both facilitators, the study's timings, the clarification of the studies objectives, the research activities, the reason and importance of the participants contribution and participant introductions.

All participants stated they had read the PIS and all consent forms had been electronically received via email, however, all participants gave their verbal consent to continue at the end of the introductory presentation. Both research questions were typed out on the virtual whiteboard and shared amongst all participants during the silent reflection stages. The questions were also read out by the primary facilitator as advised by Delbecq et al. (1975) guidance on facilitating a NGT. The participants were given five minutes for the silent reflection stage, on the first occasion the primary facilitator established a participant answering order for the round robin stages. Prior to the silent reflection stage, the group was advised to type brief answers and to do this independently. They were also encouraged to think about as many as they could and to continue to produce answers if they thought of any during the next stage (round robin).

The second stage on an NGT is the 'round robin' which is a quick-fire exercise which was estimated to last fifteen minutes per research question. However, on both occasions this stage took less time to go through and elicit all the participants answers. This stage provides an opportunity for each participant to give one answer to the research question at a time, before moving onto the next participant. This is a cyclical and repeated process until answers are no longer fourth coming or the time allotted is reached (Delbecq et al.,

1975). The participant answers were recorded in real time for all the participants to view. Where the participants offered further information to support their answer both facilitators made notes for the 'group discussion and clarification stage.'

Delbecq et al. (1975) assert the dynamics and depth to each communicated idea is important to understand. This facilitates not only an individual understanding but a mutual comprehension of those ideas which have been normally reduced to a few words or phrase that is typed on the virtual whiteboard. To ensure a group understanding of the concepts generated the primary facilitator read through each individual idea so the group could offer further explanation, re word (if necessary) and discussed how important the ideas were in relation to the research question. Delbecq et al. (1975) assert that the third stage of an NGT, that being, the 'group discussion and clarification' stage can cause disagreement and strong views to be defended. To counteract this a facilitator should pace the group to avert undue argument and to ensure there are no missed items or concepts that require discussion (Delbecq et al., 1975). This stage was given ten minutes for each NGT and in many cases the phase and ideas generated were reworded after group discussion and as a result of referring back to the notes made by the facilitators during the round robin stage. At the end of this process the group reached agreement on the terminology and phrasing of their responses for the ranking/voting stage.

The fourth stage 'ranking/voting stage' is performed to aggregate individual judgements in order to determine the relative importance and consensus of the items generated and discussed (Delbecq et al., 1975). As an initial stage it may be useful to obtain a preliminary vote by a show of hands to prompt further discussion and to stare the group towards a consensus. Delbecq et al. (1975) assert that such a process can take too much

time to resolve differences and disrupt the cohesion of the group. It has been found that majority rule processes can distort individual judgments. Conversely, it can provide further discussion on inconsistent or irregular voting and or provide an opportunity to redress items which have little or no votes (Delbecq et al., 1975). Whilst this was a consideration it was not used as there was no explicit disagreement in the group during the 'group discussion and clarification stage'. This indicated to the facilitators that all items generated were considered relevant by the group for individual ranking.

Delbecq et al. (1975) contend individualising the 'ranking/voting stage' can avoid status, personality, conformity pressures and allows each member's vote to influence the group result. A secondary outcome of using a 5-point Likert style questionnaire was that the facilitators could understand the magnitude of differences between the items generated and determine where full consensus and lower levels of agreement was reached and where it was not. This was considered the most appropriate and efficient method to determine the importance of the items generated and a more realistic reflection of the true opinions of the participants. Additionally, this would ensure only the most agreed upon risks and positive risk-taking barriers in intermediate care occupational therapy provision would be considered for the next phase of this programme of research (vignette construction).

In both NGT's the ranking/voting stage was estimated to take ten minutes each, however, the time taken was between 10 and 20 minutes per research question. This extra time allowed the primary facilitator to get some rudimentary results from the ranking sheets as they were returned by email. These results factored into the study's conclusion and gave the group an opportunity to discuss the most common items ranked. The findings (all ranked items) were sent to the participants by email shortly after the NGT finished. Even

though full consensus (every participant ranked common or very common) was not reached on every item generated the group found this to be a realistic outcome and agreed on the findings produced.

4.3.6 Risk Assessment

The use of DSE's and an internet-based video conference platform to access the NGT involved a unique set of considerations with regards to potential hazards and the risk associated with security of information. The improper and overuse of DSE's can cause fatigue, eye strain, upper limb problems and backache (Health & Safety Executive, 2020). Additionally, the video conference platform or each participant individual DSE posed a level of risk with a potential breach of data being caused by a malware virus or cyber-attack outside of Northumbria University's control. Considering this, a risk assessment was completed in order to mitigate these threats, see Appendix 6. Risk information relating to DSE use and DSE virus protection was included on the participant information sheets so that appropriate steps could be taken prior to and during the study.

4.3.7 Ethics approval and governance

Ethics approval was obtained from Northumbria University's Research Ethics and Governance reference 22992 refers. As the NGT had been designed for remote delivery it avoided any potential harm of Covid-19 infection caused by face-to-face research. This aligned with the research activities permitted by Northumbria University and RCOT during the Covid-19 outbreak and social lockdown.

This study required a very minimal amount of personal information and all cases, except for email addresses and the required signature and name on the consent form, all forms and data were anonymised. All participants were made aware that the participation was on a voluntary basis, and they could withdraw from the study at any time without giving a reason. The data could be made available to them and would not be used if they were to withdraw from the study. This data related to the participant written information only and the rankings they had made as this study was not audio recorded. The PIS conveyed this study's management of personal data in order to protect the participants anonymity and right to privacy in adherence with Northumbria University's data management policies and the Data Protection Act 2018. This was achieved by transferring all data to a Northumbria University hard drive which was password protected and only accessible by the principal facilitator (student). Additionally, all email addresses and email communications were deleted at the end of the study, unless the participant had expressly given their permission to retain their email address for future communication.

4.3.8 Data collection

The participant experience form provided demographic data with regards to the participants time as an occupational therapist and the types of intermediate care practice settings they had worked in. This was sent to the primary investigator with the participants consent forms via email prior to the study and was used for sample selection.

The participant ranking sheet was the main data collection tool for this study and was completed by the participant during the ranking/voting stage for each NGT activity to rank each research question separately. Prior to the study all participants had been sent two

blank ranking sheets. During their completion the participants were advised to type the common risk area (NGT 1) and positive risk-taking barrier (NGT 2) as they had been collated and appeared on the screen that was being shared via the Microsoft Teams document sharing function. This facilitated a quick analysis of the most common areas to be presented back to the group at the conclusion of the study. The participants were instructed to complete the ranking sheets remotely and individually and to send them back to the primary facilitators email upon their completion.

4.3.9 Data analysis

Gallagher et al. (1993) assert as NGT data is ranked there must be mathematical analysis. The purpose of this study was to produce a ranked order of results to confirm the common areas of risk and barriers to positive risk-taking in intermediate care, from the participants' perspective. All answers on the ranking sheets were counted against each item generated, this produced a hierarchy of results confirming the most and least common items. Descriptive statistics were used to present how many items reached group consensus (5 votes) or high levels of agreement (3 or 4 votes) for each item generated for each of the research questions. No within group analysis was completed as this was not a study objective.

During each of the NGT's group 'discussion/clarification' stages fieldnotes were taken by each of the facilitators. Owing to there being no disagreement about the items generated and little discussion to support participant answers it was not possible or appropriate to perform any qualitative content analysis. However, some of the participants comments

were noted for the purposes of offering further context in the discussion section of this chapter.

4.3.9.1 Presentation of the findings

There are no strict rules for presenting NGT data, however, ranking is normally presented in a tabled format which provides a visual representation of the order of the least to most ranked items. Heiberger and Robbins (2014) recommend using a divergent stacked bar chart to present Likert and or scale related data. This normally includes items on a vertical axis that correspond to the stacked bars on the horizontal axis. By establishing a neutral point at the centre of the chart, ('occasionally' in this study) the results can be separated to read right to left and left to right from the central (neutral) point. Including different colours for the stack bars and a key to indicate the categories can produce a chart which is easy and quick to read (Heiberger and Robbins, 2014).

4.4 Findings

Five participants, with experience in providing occupational therapy to older age groups in intermediate care settings, took part in the nominal group see Table 9. This was less than the desired sample of 10 participants and reported as a study limitation. Two participants (n=2) had experience in all of the desired intermediate care service models, those being, home-based, bed-based, reablement and crisis response services. All participants (n=5) had experience in bed-based and reablement services. All participants provided how long they had been occupational therapists, two participants (n=2) had over 30 years' worth of

experience, see Table 10. The mean time spent as an occupational therapist was 18 years 2 months (14 years 3 months standard deviation).

Table 9. NGT, Participant experience in intermediate care

Participant Intermediate care experience	1	2	3	4	5
Home based	x		x	x	
Bed based	x	x	x	x	x
Reablement	x	x	x	x	x
Crisis response	X			X	X

Table 10. NGT participant time as an occupational therapist (years & months)

Participant	1	2	3	4	5
Time as an Occupational Therapist	3 y 11 m	7 y 8 m	36 y 3 m	8 y	35 y

The items were generated in response to the two research questions posed and were ranked using a 5-point Likert type scale from rare to very common, see Figure 4 & 5.

Figure 4. NGT Question 1. The common areas of risk in intermediate care

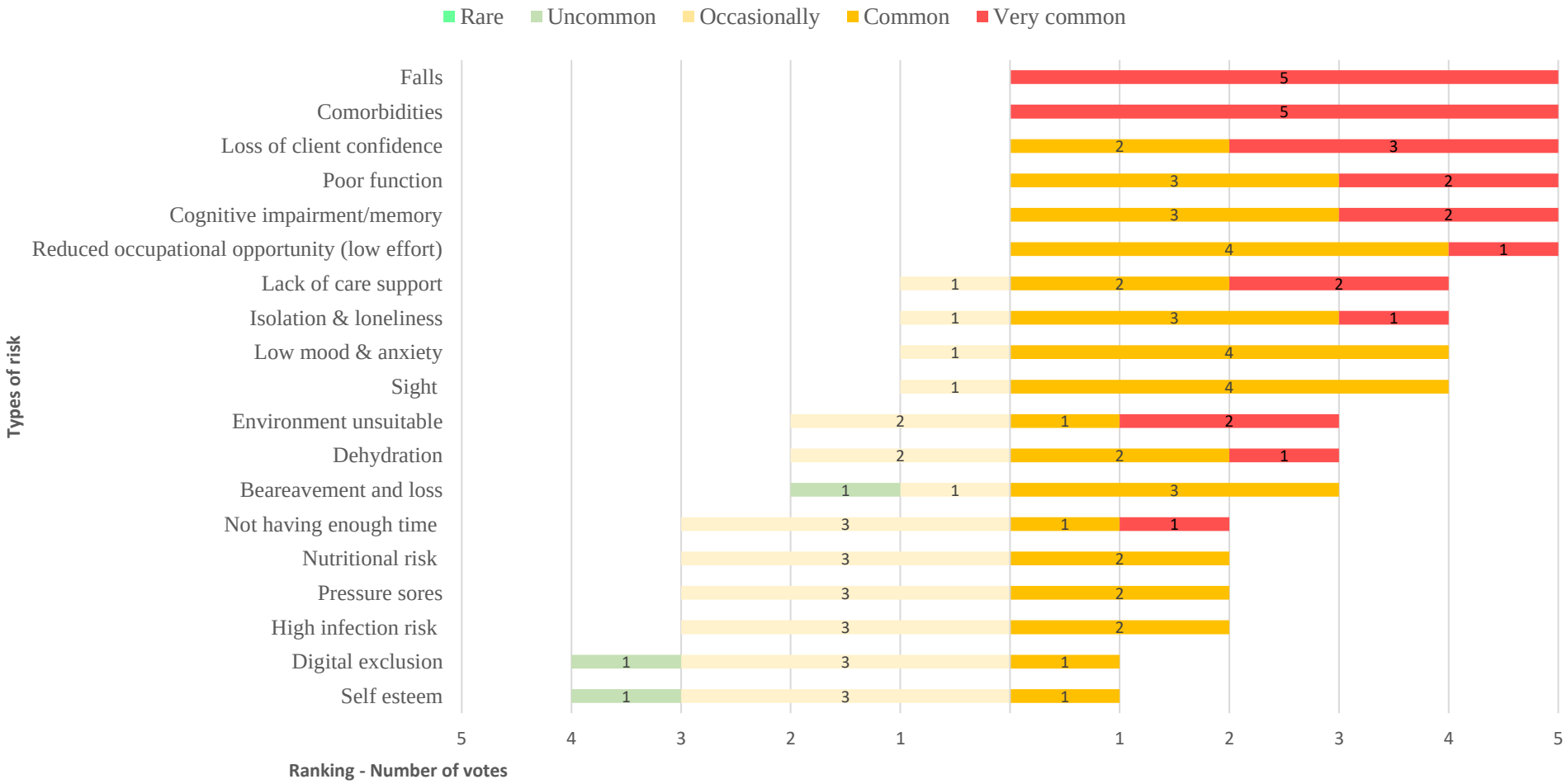
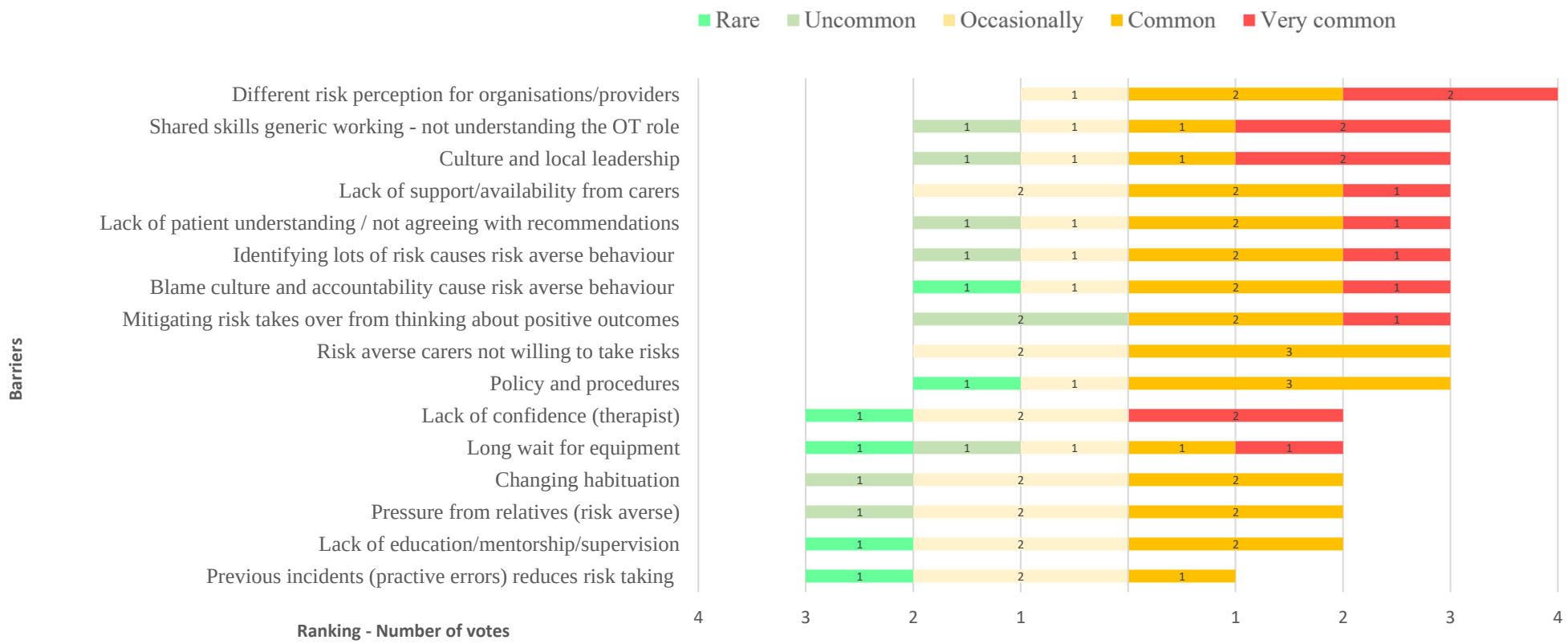


Figure 5. NGT Question 2. Positive risk-taking barriers



For the purposes of this study, full consensus was agreement amongst all participants in either the common or very common category for an individual item. A high level of agreement was 3 or 4 ratings (Common or Very Common) against an individual item. Full group consensus was achieved on six items in question 1. Moreover, two items achieved full consensus in the Very Common category, these were, ‘Falls’ and ‘Comorbidities’. intermediate care. In question 1, thirteen out of nineteen (68.4 %) of the ratings achieved a high level of agreement. In question 2, full consensus was not reached and ‘Different risk perception for organisations/providers’ was the highest ranked item with 4 votes in the Common or Very Common categories. In question 2, ten out of sixteen (62.5%) of the ratings achieved a high level of agreement.

The first NGT activity (common areas of risk) produced nineteen (n=19) responses, which are shown on Figure 4. Two items, ‘Falls’ and ‘Comorbidities’ achieved full consensus in the Very Common category and therefore were found to be the most common risks by comparison. Four items, ‘Loss of confidence’, ‘Poor Function’, ‘Cognitive impairment/memory’, and ‘Reduced occupational opportunity (low effort) received a mix of Common and Very Common ratings amongst all participants. Those items that received 4 ratings in the Common and Very Common categories and one rating in the Occasionally category was ‘Lack of care support’, ‘Isolation and loneliness’, ‘Low mood and anxiety’, and ‘Sight’. Items that had 2 ratings in the Occasionally, Uncommon and Rare categories were ‘Environment unsuitable’, ‘Dehydration’, ‘Bereavement and loss’. Those items with 3 or more ratings in these categories, were ‘Not having enough time’, ‘Nutritional risk’, ‘Pressure sores’, ‘High infection risk’, ‘Digital exclusion’ and ‘Self-esteem’.

The second NGT activity (positive risk-taking barriers) produced sixteen responses (n=16) which are shown on Figure 5. The highest ranked item, 'Different risk perception for organisations/providers' received two ratings in the Common category and two ratings in the Very Common category. Those items receiving the next most consensus was 'Shared skills generic working-not understanding the OT role' and 'Culture and local leadership' which received two Very Common ratings and one Common rating each. The next most rated items were 'Lack of support/availability of carers', 'Lack of patient understanding/agreeing with recommendations', 'Identifying risk causes risk averse behaviour' and 'Blame culture and accountability cause risk averse behaviour'. All these items received one rating in the Very Common category and two ratings in the Common category. In the context of the item, 'Lack of patient understanding/agreeing with recommendations', the participants agreed that this was linked to a client's cognitive capacity to understand the harms and benefits to positive risk-taking and that not agreeing in any context, including not being able to understand was a barrier. The items 'Risk averse carers not willing to take risks' and 'Policy and procedures' received three Common ratings. The items 'Lack of Confidence (Therapist)', 'Long wait for equipment', 'Changing habituation', 'Pressure from relatives (risk averse)', 'Lack of education / mentorship / supervision' and 'Previous incidents (practice errors) reduces risk taking' were rated as less prevalent.

4.5 Discussion

Using an NGT, this study has elucidated the common areas of risk and positive risk-taking barriers in intermediate care from the perspectives of experienced occupational

therapists. The items, ‘Falls’ and ‘Comorbidities’ were the highest ranked risks rated by participants in relation to their practice in intermediate care. In terms of barriers to positive risk-taking, the highest rated item was ‘Different risk perception for organisations/providers’. This was followed by ‘Generic working – not understanding the OT role’ and ‘Culture and local leadership’.

Although ‘Falls’ was the most common risk factor, the subsequent ranked items were interrelated as they can all be considered as risk factors for falling. This suggests the prevention of falls is a particular priority and focus within intermediate care occupational therapy. This is perhaps unsurprising as falls in older people is a global public health concern and one of the main causes of injury, injury-related disability, and death in older people (Berková and Berka, 2018, McCarthy, 2016). Being linked to multiple risk factors is also a characteristic of comorbidity; these risk factors include increasing age, being female, having low socioeconomic status and having a pre-existing medical condition (Valderas et al., 2009). Similar to ‘Falls’, comorbidities is one of the most important issues facing health systems in the developed world and a single disease approach is unable to address this problem appropriately (Barnett et al., 2012). Falls and comorbidities are multi-dimensional and are complex, in that, their risk factors compound and have a synergistic effect to increase their occurrence. This together with their capacity to reduce a person’s quality of life and life expectancy is likely to be reason for their prevalence in this study’s findings.

There were some notable similarities in some of the findings between the first and second NGT activities. The fifth most common area of risk identified in the NGT was

‘Cognitive impairment/memory’. In the second NGT activity (positive risk-taking barriers), ‘Lack of patient understanding/not agreeing with recommendations’ was also ranked fifth. The prominence of a client’s cognitive ability in the context of positive risk-taking refers to their comprehension of the benefit and harms to taking the risk and whether an occupational therapist feels confident they have the mental capacity to consent. Trachsel et al. (2014 p.360) states, ‘decision-making capacity is an indispensable prerequisite for medical treatment choices, including consent to treatment, treatment discontinuation, and refusal of treatment, and thus, the basis for patients’ right to self-determination.’ Older people are more vulnerable to cognitive impairment and serious ill health which can affect their capacity to make decisions (McIntyre and Atwal, 2005). Many mental and physical disorders can affect decision making capacity, as such, there is broad range of clinical conditions including various forms of dementia, delirium, organic amnestic syndromes, brain injury, and disorders of consciousness. These can cause persisting issues with, or, fluctuations in cognitive capacity making it challenging to support decision making (Trachsel et al., 2014). In this context a client’s mental and physical disorder present complexities which are hard to reconcile with autonomy promotion and safety and this is likely to explain its prominence as an item in both NGT activities.

The item, 'a lack of support’ was both a common area of risk and a positive risk-taking barrier; this signifies that not having appropriate support in place is both a common risk and a problem in enabling people to manage risk. This problem may be exacerbated by the demands on the health and social care system and shortages in external support. AgeUK (2021) report millions of older people are struggling to get the support they need, and carers are often left to manage on their own.

The item ‘Different risk perception for organisations/providers’ was the most common barrier to positive risk-taking and risk averse behaviour was a prominent theme in three items rated with in the Common and Very Common categories. Risk perception is integral to judging risk which includes, cognitive, affective and behavioural dimensions (Paek and Hove, 2017). Occupational therapy can involve many risk judgements including those that relate to a client, therapist and or an organisation. Risk judgements can be affected by many work-related stresses and reliably influenced by contextual factors (Paek and Hove, 2017). These commonly include the dread associated with harmful outcomes and how controllable the risk is perceived to be. Such feelings may potentially invoke an affective (emotional) response and influence risk judgements and whether a risk is accepted (Ferrer and Klein, 2015). Morgan and Andrews (2016) contend professional risk and organisational culture can present barriers to decision making that result in risk averse behaviour.

The positive risk-taking barrier ‘Blame culture and accountability cause risk averse behaviour’ was a highly ranked item. In 2009 Khatri et al., contended that health and social care organisations are finding it hard to move from a culture of blame to a just and fair culture. A more recent NHS survey investigating attitudes towards patient safety found a significant number of staff still continue to have concerns about whether their organisation takes action to address patient safety issues, and that nearly a third of respondents said that they do not feel they would be treated fairly when raising a concern (PatientSafetyLearning, 2021).

Risk averse practice will limit the effectiveness of therapy and potentially fail to assess risk appropriately. Moreover, risk assessments are notoriously difficult (Murray and Thomson, 2010a, Murray and Thomson, 2010b) especially, where professional groups are known to have differing moral and ethical philosophies of care with different levels of paternalistic approach and or ideological focus that are potentially conflictive (Daly, 2004). This may indicate why 'Different risk perception for organisations/providers', 'Generic working – not understanding the OT role' and 'Culture and local leadership' were rated highly as barriers to positive risk-taking.

4.6 Strengths and limitations -

The NGT activities have brought together experienced occupational therapists that have worked in all service models of intermediate care. In contrast to many studies found in the scoping review (Chapter 2) the NGT has made risk the explicit focus of the study. This has added a valuable clinical perspective to the common areas of risk in intermediate care and the positive risk-taking barriers associated to occupational therapy intermediate care interventions.

The study limitations relate to the sample size, study design, time restriction and limited qualitative data. The sample size of the study was five occupational therapists which was less than intended. The reason for this low uptake is likely to be because recruitment for this study was during the Covid-19 pandemic and at a time of extreme stress on the NHS and occupational therapy services. It is likely that more participants would have generated more items during the silent reflection stage and possibly invoked

more discussion during the clarification and discussion stages. An NGT is supposed to look at one question per activity. This study employed two NGT activities consecutively in its study design, this may have impacted the findings of the second study owing to the cognitive burden the participants may have experienced. This also relates to the amount of time allotted to each study as one activity over the same amount of time designated to two activities may have enhanced the study's findings in relation to each research question. Therefore, two separate NGT studies may have been more appropriate. Additionally, this study was not audio or visually recorded, and it is likely that qualitative data was lost because of this design decision.

4.7 Data triangulation

Bans-Akutey (2021) suggests there are three different areas of research triangulation. First, it helps confirm research findings, second, deficiencies in one research method can be compensated by another and, third, more insight can help explain phenomena. In this part of the chapter the scoping review and NGT findings will be triangulated. For the purpose of triangulation, the areas of risk which are consistent amongst the studies, share empirically related risk factors and or are known to have a relationship (i.e., discharge being associated to falls) will be discussed. Unspecific risks or positive risk-taking barriers which present a general concept (i.e., comorbidities or different risk perceptions) that were neither exact nor detailed will not be compared in the context of triangulation.

The NGT found 'Falls' to be the most common area of risk, 'Isolation & loneliness' to be highly rated and 'Nutritional Risk' to be a common risk, albeit its rating was mostly

in the ‘Occasionally’ category receiving only two votes in the ‘Common’ category. These were the areas of risk which directly relate to the scoping review findings, those being, the risk domains of ‘Falls’, ‘Loneliness’ and ‘Nutritional care’. In the context of the number of articles reviewed, ‘Falls’ was found to be the most common with nine (n=9) studies and in stark contrast ‘Loneliness’, and ‘Nutritional care’ had one study each under review. The ‘Loneliness’, and ‘Nutritional care’ risk domains are also fall risk factors.

The Chana et al. (2016) study included in the scoping review found that the relationship between physical health, mental health and loneliness was cyclical and complex. Occupational therapists alluded to their lonely clients being less likely to be active, resulting in physical deconditioning which had the potential to increase their risk of falling. In relation to older adults living with dementia, malnutrition was identified to affect motor skills (Mole et al., 2019). Neyens et al. (2013) assert malnutrition increases the risk of falling in older adults.

In relation to a client’s transition, discharge from hospital was the only transition (between environments) identified and associated to being a risk prone area of practice in the scoping review. Whilst ‘Discharge’ as a risk domain was not identified in the NGT all of the identified common areas of risk and positive risk-taking barriers would be relevant to such a transition, especially, the risk domain of ‘Falls’.

In the context of the scoping review, Kinn and Galloway (2000) reported on the importance of teaching older adults how to rise after a fall, emphasising it as a key prevention strategy at the point of discharge. Hasegawa and Kamimura (2018)

developed a standardized assessment for home safety in the management of falls prevention for older adults focusing on mitigating the risk of falls during a discharge from hospital to home transition. Xu et al. (2019) sought occupational therapists' perspectives on adapting the Stepping On falls prevention programme for community dwelling stroke survivors, highlighting that two-thirds of stroke survivors experience a fall in the first six months of discharge. Ruchinskas (2003) alluded to the importance of older adult falls prediction shortly after a hospital discharge and how correctly predicting those at the most risk of falls can prevent injury. Davis Aisling and McClure (2019) found occupational therapists perceive a home visit as part of discharge planning to be beneficial as it provides an opportunity to assess their client in their home environment, identify potential functional difficulties and reduce the risk of falls. Moreover, a cognitive impairment or decline in cognitive ability was an major influence on whether to conduct a home visit. Additionally, a successful home visit following a discharge from hospital was seen as one where the client risk factors had been identified, thereby increasing the patient/family risk awareness to mitigate their affect. This was seen to increase a patient's/family's insight and confidence into care needs.

The link between hospital to home discharge and falls prevention emphasises the importance of assessing the level of a client's functional and cognitive ability in relation to the demands of their home environment and this is a collaborative process between the client, their carers/family, and the occupational therapist. The NGT findings highlighted that a cognitive impairment and a lack of support were both common risks and positive risk-taking barriers. The scoping review provides context to the importance of these in relation to a discharge to home visit and in relation to 'Falls' (the most common risk in the scoping review and NGT studies).

With the incidence of falls in older adults increasing and falls being the most common cause of injury, a frequent cause of disability and mortality (Berková and Berka, 2018) and more prevalent in those with a cognitive impairment (Montero-Odasso and Speechley, 2018), its prominence in the scoping review and NGT is understandable. Moreover, a caregivers/family support is integral to preventing falls and to managing all falls related risk factors. A client's fall can present a catastrophic outcome, and, in this context, such a potential eventuality can invoke the fear of falling in both a client and their caregivers/family. It is therefore understandable why risk averse behaviour was such a prominent theme in the positive risk-taking barriers. In relation to occupational therapy provision, 'Blame culture and accountability cause risk averse behaviour' and in relation to caregivers/family, 'Risk averse carers not willing to take risks' were both highly rated is common positive risk-taking barriers.

This triangulation has provided that discharge is a risk prone area of practice which is synonymous with occupational therapists mitigating the risk of falls for their clients. In this context, falls present as an area of high risk, especially where a client has a cognitive impairment. Embracing these risks are necessary to employ positive risk-taking and risk averse feelings in respect of the fear of blame or a family not supporting positive risk-taking are important considerations. As such, these findings can be used to construct vignettes for the next stage of this research programme.

4.8 Implication for this research programme

The NGT findings have provided common areas of risk and prevalent barriers to positive risk-taking. Also, they have presented key information for the next stage of this programme of research (vignette construction). It is apparent that many of the common risks identified in the scoping review and NGT study are related to older adults falling and these risk factors are more pronounced at the point of discharge when rehabilitation is required. This highlights the importance of occupational therapy as part of a multidisciplinary approach with the client and their carers and or family to mitigate risk and to agree on the best and safest positive risk-taking strategies.

The vignettes can be constructed using a discharge to home scenario as this setting is a well-known role within occupational therapy intermediate care and has been found to be a risk prone area of practice. Moreover, fall prevention has been found to be a prominent consideration during discharge planning, linking its risk factors (many of the common areas of risk identified in both studies).

One prominent falls risk factor was both a common area of risk and a positive risk-taking barrier, that being, a client's cognitive impairment. In addition to including discharge, falls and cognitive impairment aspects within the vignette it would be logical to include what level of support the clients has at the point of discharge and whether such support is risk accepting or risk averse. Likewise, another aspect of the vignette could present a hypothetical scenario to the respondent where they worked in a blame culture (or a risk accepting/learning culture) to investigate a therapist's propensity to be risk averse in this context.

Altering the complexity or introducing a decisional factor which is known to impact decision making is a key aspect of a vignette based factorial survey design. In this context, the scoping review and NGT studies together provided the necessary information to construct real to life hypothetical risk prone vignette scenarios for the factorial survey in Phase 3 of this research programme.

4.9 Chapter summary

The NGT study as presented in this chapter has achieved its aim and objectives by elucidating the common areas of risk and positive risk-taking barriers from experienced intermediate care occupational therapists giving a clinical perspective to support the scoping review findings in Phase 1 of this programme of research.

The majority of items generated in both NGT activities have been ranked in the common and very common categories receiving three or more votes in either category. Responses that were rated in the occasionally category were considered neutral, that being, neither common or uncommon, although these responses were ranked higher than the uncommon and rare category responses. Thirteen common areas of risk in the first NGT and ten positive risk-taking barriers in the second NGT achieved a high level of agreement. The most common areas of risk were ‘Falls’ and ‘Comorbidities’ receiving full consensus (rated by all participants as Very Common). The next most ranked items were, ‘Loss of client confidence’, ‘Poor function’, ‘Cognitive impairment/memory’ and ‘Reduced occupational opportunity (low effort)’. In contrast the positive risk-taking barriers

identified in the second NGT activity did not receive as much agreement with no single item being ranked solely in either the ‘Common’ or ‘Very Common’ categories. The item, ‘Different risk perception for organisations/providers’ was the highest ranked positive risk-taking barrier with 4 votes in the ‘Common’ or ‘Very Common’ categories. The next highest ranked positive risk-taking barriers were, ‘Shared skills generic working-not understanding the OT role’ and ‘Culture and local leadership’ which received two Very Common ratings and one Common rating each. These were then followed by, ‘Lack of support/availability of carers’, ‘Lack of patient understanding/agreeing with recommendations’, ‘Identifying risk causes risk averse behaviour’ and ‘Blame culture and accountability cause risk averse behaviour’.

The NGT and scoping review findings were triangulated to elucidate the commonalities across the studies to provide further insight and meaning. In this context, key information was highlighted during triangulation, that being, the interrelatedness of discharge, falls, a client’s cognitive impairment and the importance of carer and family support. Additionally, the NGT found that positive risk-taking was impacted by risk averse feelings which could be contributed to the client’s carer/family and or the occupational therapist through the fear of blame and accountability.

It was important to this programme of research to construct the vignettes using the common areas of risk and positive risk-taking barriers that have been ranked with high agreement, that being, 3 or more ratings in the Common and Very Common categories. Moreover, a preference was given to those common areas of risk which triangulate with the scoping review. Whilst this provided a clear direction for vignette construction, a

limitation within the NGT study was some of the highest ranked items described a general concept (those being not exact, detailed or needing context), making them difficult to triangulate. Their lack of detail made it difficult to articulate their meaning in a vignette narrative. These items mainly related to perceptions, a lack of understanding, cultures, undefined functional deficits, or specific areas of where a client might lose their confidence. Recording the NGT's clarification and discussion stages may have avoided such ambiguity, however, some of these items may have been difficult to describe in detail given the time limits of the NGT. These were considerations in the next stage of Phase 2 (Vignette design and production) as presented and discussed in the next chapter.

Chapter 5 – Vignette design and production

5.1 Introduction

In the previous chapter, the NGT identified thirteen common areas of risk and ten positive risk-taking barriers which had a high level of agreement (3 or more votes). Analysing these results with the scoping review findings has provided further insight, confirmability, and explanation in these areas of occupational therapy intermediate care risk. In the context of the scoping review findings there is a paucity of risk research in occupational therapy intermediate care. This is despite its findings identifying common areas of risk and their characteristics and the NGT verifying many aspects of these findings in addition to identifying prevalent positive risk-taking barriers. It is evident that occupational therapists face risk and positive risk-taking barriers in intermediate care provision and investigating these imperatives would address a gap in knowledge.

In Chapter 3 vignette methodology was introduced as an effective approach to studying professional decision making avoiding methodological, practical and ethical issues with studying risk in clinical practice. Vignettes have been used to study decision making in heterogeneous groups of professionals from (but not limited to) health and social care, education and business (Barter & Renold, 1999; Hughes & Huby, 2002; Taylor, 2005).

Using the scoping review and NGT findings, vignettes were constructed to approximate real life risk prone scenarios in occupational therapy intermediate care provision. The vignettes were used to conduct a factorial survey to elucidate what positive risk-taking barriers have the most effect strength on a risk related decision. Additionally, as there are known risk perception differences between novice to expert levels of experience

when making decisions under risk it was sagacious to use the vignettes to test this diversity of experience. In conclusion of Phase 2 of this research programme, this chapter outlines the vignette design from content, presentation, and construction considerations to evaluating them for validity.

5.2 Method

This part of the chapter will focus on psychometric considerations in creating risk scenarios in vignette design before introducing the systematic process used to construct and evaluate the vignettes for validity. The rationale for selecting the vignette style and content will be presented and discussed in relation to employing a factorial survey (Phase 3), alluding to the design features which are synonymous with its methodology. Additionally, this discussion will focus on vignette construction addressing aims 2 and 3 of this programme of research. These aims were:

- To construct hypothetical but true to life risk related scenarios which represent risk prone areas of occupational therapy intermediate care provision.
- To use these vignettes to investigate the effect strength of positive risk-taking barriers across different levels of occupational therapy experience.

5.2.1 Psychometric considerations

Psychometrics in research have been described as the science of measuring mental capacities and processes (Breakwell, 2007) and this measurement is directed at psychological constructs of interest which defy observation (Coolican, 2019) (i.e., an individual's perception of a risk). In this context, questionnaires and interviews are commonly used to study human attitudes and behaviours, however, criticism is often directed at these methods as they can elicit unreliable and biased self-reports. Furthermore, these methods are known to invoke abstract thought which inhibits any discernible measurement of what is being investigated (Alexander & Becker, 1978). Moreover, posing vague questions may invoke the respondent to add context where not originally intended. The solution is to make the stimulus as concrete and as detailed as possible. Vignette methodology offers a solution to this as vignettes can be constructed to closely approximate a real decision or judgment making situation (Alexander & Becker, 1978). As such vignettes are a key part of the data collection instrument as they contain decisional factors which can be controlled, manipulated, and measured as part of a factorial survey approach.

Slovic et al. (1986) states, one broad strategy for studying perceived risk is to develop a taxonomy for hazards that can be used to understand and predict responses to risk. Psychological constructs of interest (factors) are often the result of supporting research and in this respect the scoping review (Chapter 2) and NGT (Chapter 4) have provided such a taxonomy and hierarchy of considerations for vignette construction. Slovic et al. (1986) contend that a taxonomic scheme has been used to explain people's extreme

aversion to some hazards, their indifference to others and the discrepancies between these reactions and experts' opinions. The potential discrepancies between novice, semi-expert and expert levels of experience of risk aversion and the positive risk-taking barriers that might elucidate these differences is of particular interest in this programme of research. Risk aversion may lead to a positive risk-taking recommendation being less likely and failure to fully embrace risk to enable an occupational therapy service user.

A common approach to explaining a risk averse reaction to hazards has employed the psychometric paradigm. According to the psychometric paradigm, people judge the riskiness of a hazard based on the combination of a range of (perceived) risk characteristics. These commonly include, how controllable the risk is, the dread attributed to it and how catastrophic it may be (Paek & Hove, 2017). Moreover, the psychometric paradigm connects physical stimuli to mental phenomena (psychophysics) by using scaling and multivariate analysis techniques to produce quantitative representations or 'cognitive maps' of risk attitudes and perceptions (Slovic et al., 1986). A factorial survey uses quantitative data analysis, where the factors are regressed on a dependent variable, and this includes multivariant analysis which measures the variables interrelationships. In this stage of this research programme, vignettes are the physical stimuli in which to study the phenomenon of risk. They will include the most common risks and positive risk-taking barriers as psychological constructs to elucidate which positive risk-taking barriers have the most effect strength on a risk related decision at different levels of occupational therapy experience.

5.2.2 Creating risk by design

Vignettes offer a partial representation of a true to life situation and unbiased methods for choosing vignette factors and content are needed when it is not possible to include or fully represent all the factors that could be associated to a real-life situation (Brauer et al., 2009). The content and factors for vignette construction have been provided by a scoping review and a consensus study by NGT where both research methods have used systematic processes. Rigorous research methods are important for vignette construction. Stacey et al. (2014) assert that the central principle is that the behaviour of interest demonstrated in a simulated situation by those for whom the vignette is intended should closely resemble their actual behaviour in a clinical situation.

As the use of vignettes in multiple study designs increases, so does interest in the methodological basis for vignette development (Hughes & Huby, 2004; Sauer et al., 2020a; Shamon et al., 2022). In the context of constructing theory-based vignettes for illustrating an interprofessional approach to shared decision making for healthcare professionals, Stacey et al. (2014) devised a process to create and appraise vignettes. This process has been adapted for this programme of research. These stages are: (1) Determining style, factors and content (2) Selecting a clinical scenario; (3) Presenting levels of complexity; (4) Drafting vignettes (5) Evaluating validity. Additionally, the vignettes were evaluated for a second time during a pilot study to ensure the data collection instrument (vignettes and survey platform) were optimised, this will be discussed in the next chapter as part of pilot testing the factorial survey.

5.2.2.1 Stage 1. Determining style, factors and content

This stage of the vignette construction will address the systematic process behind selecting the vignette style, content, and factors. This discussion will focus on key vignette construction decisions in relation to ensuring their relevance to occupational therapy intermediate care risk management and in reducing the potential for the vignettes to invoke respondent cognitive burden.

Vignettes use different stimuli or combination thereof, they can be just text, images, video, or incorporate a mixture of formats in order to describe a scenario or scene (Aguinis & Bradley, 2014). However, images and video are difficult to control and manipulate for experimental purposes. Vignettes used in multi-factorial survey experiments typically describe hypothetical situations or persons by a running text, i.e., a paragraph of one or several full sentences (Sauer et al., 2020b). Moreover, text-based vignettes are adaptable and therefore conducive with experimental methods in a factorial survey design (Hughes & Huby, 2004; Taylor, 2005).

Sauer et al. (2020b) assert the main advantage with text-based vignettes is that they can portray ‘real-life-stories’ and as part of this they can incorporate implicit information which is subtle and indirect which is useful to investigate sensitive topics. Another advantage of textual vignettes in comparison to using video are that they impose low cognitive demands and only require selective attention (Kinicki et al., 1995). It was important to this programme of research to facilitate the interchangeability of the content and variance in the vignette information to conform to factorial survey

methodology. In this context, the scope to employ experimental methods whilst being able to control the amount of information to prevent cognitive burden in the vignette were important considerations and this necessitated designing the vignettes using text. As a next step the format of the vignette text was considered to optimise presentation and to ensure the vignette was easy to read.

In the context of creating vignettes for a factorial survey, Sauer et al. (2020b) assert that presentation style is fundamental to vignette design and commonly vignettes are presented in running text or a tabled format where only the assailant information (factors) are presented. Only a few studies have contrasted a text and tabular format in vignette construction (Shamon et al., 2022; Sauer et al., 2020b). In this study the vignette construction included the careful application of both text and an adapted tabled style. In this part of the chapter the benefits and disadvantages will be discussed in relation to how these two different styles were combined to produce a unique vignette design to present the vignette information in the factorial survey.

Using a tabled format has its advantages as it reduces text and therefore cognitive demands, and it can avoid problems with syntax when information is manipulated or randomised as part of a factorial survey. In contrast, a tabled format is less useful when describing a clinical narrative which portrays a risk scenario where context is required. Moreover, using a tabled format may increase the likelihood of respondent heuristics or invoke social desirability bias when the decisional factors are presented more evidently in tables instead of being embedded (implicitly) in a vignette narrative (Sauer et al., 2020b). In this context, invoking heuristics through a lack of vignette context was seen

as being in conflict with experimental method as used in a factorial survey, that being, heuristics could introduce confounding which is likely to reduce the reliability of the results. Additionally, embedding the factors in the vignettes was an important design feature to mitigate social desirability patterns of responding which has been associated with participants when they play a role in the vignette scenario (Hughes & Huby, 2004). Adopting a first-person perspective was necessary in the context of vignette construction in order to create a true-to-life simulated clinical environment where the participants could picture themselves and where their expertise was relevant.

Atzmüller & Steiner (2010) suggest that when using vignettes for experimental purposes consideration should be given to the information in the vignette which is going to be manipulated, controlled (consistent information) and what information provides context (non-essential and changeable information). A further consideration was the use of a continuous narrative. Using a continuous narrative can build upon previous events and be economical in terms of time as contextual material need not be supplied for each scenario. This can leave scope for extended coverage of issues contained within the vignettes (Hughes, 1998; Hughes & Huby, 2004). Evans et al. (2015) suggest that writing the vignette in a story like progression is advantageous to creating realistic vignette content and appropriate for factorial survey vignettes.

The continuous narrative approach was adapted for this programme of research. An introductory vignette was used for all respondents, this vignette was solely informative and eliminated the need to repeat contextual information in the vignettes as the respondent progressed in the factorial survey. Moreover, the introductory vignette was

constructed to add circumstantial context to make explicit the occupational therapy role and give a sense of purpose to the participants. In addition to the information contained within the introductory vignette, each vignette included a short paragraph of information as a first section followed by bullet points (positive risk-taking barriers or facilitators); this second section did not require lots of text and therefore was akin to a tabled format to reduce the potential for cognitive burden. Additionally, setting out the positive risk-taking barriers in this way is conducive with focusing the respondent's attention. The process of guiding the respondent to the factors of interest (though be it implicitly) are known to facilitate experimental effects (Evans et al., 2015).

In relation to deciding upon the vignette content, the vignette construction was informed by the preceding studies in this programme of research (scoping review and NGT). The common risk domains identified in the scoping review (i.e., falls and discharge) were selected for vignette content. Likewise, the NGT responses that reached three or more ratings in the common and very common categories were considered eligible for the vignettes.

The introductory vignette presented the start of the vignette narrative and orientated the respondents to their role and purpose. The succeeding experimental vignettes (incorporating the positive risk-taking barriers) introduced contextual information which depicted an older adult in their 80's to align with the age group that mostly access intermediate care. All vignette scenarios were constructed around the theme of falls and discharge to reflect the most common areas of risk in the scoping review or NGT studies. However, this was done without explicitly stating there was any risk. This

facilitated the respondent to freely interpret the risks as they perceive them, as the included hazards/risk factors can have multiple meanings and be relevant to many other health and functional issues. Additionally, by using no extreme situational context (high risk examples) reduced the likelihood of the respondent's attention being drawn away from the positive risk-taking barriers.

In the initial introductory section of each vignette, the client was described as having two or more medical conditions in line with 'Comorbidities' (second most common area of risk in the NGT findings) and a falls risk factor. The hypothetical client's medical conditions were given further context to include medication management as this would be a relevant association, particularly, as nearly 2 million older adults are on 7 or more prescriptions (AgeUK, 2022). Moreover, polypharmacy is a common consideration in occupational therapy older adult assessment, especially when determining risk factors related to falling (McIntyre & Atwal, 2005). The inclusion of a falls history (no falls within the last year) explicitly introduced falls as a consideration within the vignette. Empirically there is an increased likelihood of further falls after the first, however, those that are considered higher risk are known to have 2 or more falls within the last 12 months (NICE, 2019). The inclusion of difficulty in performing ADL's (fourth most common risk finding in the NGT) affirmed the need for occupational therapy. Moreover, difficulty in performing ADL's has been associated to being at risk of falling (NICE, 2019). Additionally, the hypothetical client in the vignettes had a mild to moderate cognitive impairment, this gave context to the positive risk-taking barrier relating to the clients understanding (or lack thereof) and introduced a further falls risk factor. Following this the respondent was invited to consider four bullet points of information which related to positive risk-taking.

As discussed in the previous chapter some of the NGT responses that received a high level of agreement were unspecific requiring further context, for instance, describing differences in understanding, cultures, and perceptions. Such generality was not conducive with constructing clearly defined factors and potentially invited the misinterpretation of the factors intended meaning. As such, only the positive risk-taking barriers which were specific and were highly rated in the NGT were used. After applying this criterion and in order of the most prevalent responses, the positive risk-taking barriers included in the vignette construction were:

- Lack of support/availability from carers
- Lack of patient understanding / not agreeing with recommendations
- Blame culture and accountability cause risk averse behaviour
- Risk averse carers not willing to take risks

In their vignette design guidance, Evans et al. (2015) recommend vignette content should follow a similar structure, be neutral (where possible) with respect to cultural and socio-economic factors and balance gender and age across the vignettes. As such, the vignettes were constructed uniformly without using any explicit socio cultural and or political reference, used the same age group and were divided equally between male and female genders.

5.2.2.2 Stage 2. Selecting a clinical scenario

The selection of a clinical scenario for the vignettes was determined using two criteria:

- the scenario must reflect a risk prone area of occupational therapy intermediate care provision
- The common areas of risk and positive risk-taking barriers must relate to this risk prone area of practice

Intermediate care uses a range of service models to keep people as independent as possible by preventing unnecessary hospital admissions and to facilitate a safe and timely discharge from hospital (NICE, 2017). A logical scenario for the vignettes was to describe a situation involving a hospital to home discharge to less dependent care where the patient transitioning required occupational therapy. Intermediate care in this context would provide a service user with short-term rehabilitation in order to reach a safe and desirable level of independency in relation to their functional ability and support. Such a scenario would require occupational therapists to employ positive risk-taking strategies. Therefore, barriers to positive risk-taking would be relevant in this context.

The Phase 1 scoping review findings identified ‘Discharge’ as the second most common risk domain. The risk domain of ‘Discharge’ had many risk characteristics identified in the reviews ‘Decision making under risk’ category. In this context, occupational therapists promote a client’s autonomy, however, sometimes this can be difficult to reconcile with optimising their safety (Moats, 2007), thereby, adhering to the ethical principle of non-maleficence. The balance between autonomy and safety can present an ethical conflict, especially where the balance is hard to determine. Such considerations are relevant to employing positive risk-taking.

In the context of occupational therapy at the point of discharge, a client's cognitive impairment (particularly when undiagnosed) and families unwilling to accept risk cause decisional complexities in discharge risk management (Moats & Doble, 2006; Moats, 2007). The NGT findings also confirmed these as prevalent areas of risk and positive risk-taking barriers. In the scoping review findings, decisions of this nature were also subject to extrinsic considerations including the fear of risk-taking repercussions and prejudices that support risk avoidance. Likewise, the NGT found 'Blame culture' to be a positive risk-taking barrier. Blame culture has the capacity to instil fear and risk averse behaviours in occupational therapists in risk prone situations like discharge to home transitions. In light of these findings, discharge as a risk prone area of practice was used for the vignette scenarios.

5.2.2.3 Stage 3. Presenting levels of complexity

The length and complexity of the vignette can influence response. Short vignettes can maximise response rate but restricting their context/factors might also lead to disinterest or if the question becomes repetitive the 'carryover effect'. Hellier (2018 p.39) asserts the carryover effect can be caused by subjects interpreting the purpose of the experiment in one condition and this interpretation influences their performance in the next condition. Increasing the length of a vignette might cause participants to lose interest or answer more carelessly (Hughes & Huby, 2004). In this context, all vignettes were constructed not to exceed 150 words, with each vignette relating to one client and one hypothetical positive risk-taking scenario.

Controlling, either including or omitting, positive risk-taking barriers within the vignette scenario facilitated the manipulation of the vignette complexity. Providing occupational therapy between the interface of hospital and home is relevant at all levels of experience. An important consideration was to create a hypothetical vignette scenario which was not too complex for novices or too simple or unrealistic for experienced occupational therapists (semi-experts and experts). To achieve this, the vignette context was kept consistent with only very minor variations to signify a different client (their name and gender). Therefore, only the positive risk-taking barriers (factors) were manipulated and changed systematically in the vignette narrative.

As part of an occupational therapy risk enablement plan, occupational therapists and occupational therapy students on a fieldwork placement are required to assess the risks that have been identified. Simply put, 'hazards' or 'risks' are apparent, or they are not and this introduces a dichotomy in risk assessment where only the identified risk are assessed, managed or form part of a positive risk-taking decision. Conversely, when there are fewer 'hazards' or 'risks' this facilitates recommendations pertaining to positive risk-taking. In consideration of this, the positive risk-taking barriers were arranged into facilitators (omitted, less risk) and barriers (included, more risk) in the vignette scenario.

5.2.2.4 Stage 4. Draft vignettes

In this part of the chapter the process of drafting the vignettes is discussed in relation to arranging the vignette information into experimental, controlled, and contextual aspects

(Atzmüller & Steiner, 2010; Evans et al., 2015). The experimental vignettes (including the positive risk-taking barriers) will be discussed alluding to how the content was structured in relation to promoting vignette validity. The vignettes were drafted by the researcher (student) and submitted to the supervision team and discussed during supervisory meetings. This was an iterative process which helped construct the vignettes in line with the style, content, complexity and presentation criterion and helped to ensure any misleading details, ambiguous or illogical combinations were avoided.

Evans et al. (2015) contend that when the vignette content has been established from the literature and from clinical experience, the vignettes should be clearly written and carefully edited to be no longer than necessary. Taylor (2005) states when creating vignettes, the vignette should be constructed in a standard series of sentences suited to how the information is usually presented (to approximate a real-life scenario) and that each vignette maintains this logical order. As such, the introductory vignette was arranged into a format that informed the respondent of the occupational therapy role, purpose, client context and objective, see Table 11 (Introductory vignette).

Table 11. Introductory vignette

Context	Vignette text
Occupational therapy role Purpose Client context Objective	You are working as part of a multidisciplinary team who are collectively involved in the care of older adults. One of your duties is to conduct home visits to facilitate a safe and timely discharge from hospital and this involves working with many agencies also involved in discharge planning. Over the next few days, you have four home visits arranged and this will require coordinating discharge with many different workers and carers. During your activities of daily living assessments, you determine that for each client there is a moderate level of risk of harm that will require modifying their environments, ordering equipment and some safety education. Additionally, each client and their family recognise that there are challenges to remaining independent and are focused on your recommendations. However, you must consider some other factors before determining whether you will support a home discharge.

Vignette methodology has its critics, and this criticism is often focused on whether textual hypothetical scenarios sufficiently represent real world phenomena. As such, this raises concerns to vignette validity and the quality of the research findings that employ

vignettes as an instrument of data collection (Aguinis & Bradley, 2014; Evans et al., 2015; Hughes, 1998). In the context of drafting and constructing vignettes to address validity, Evans et al. (2015) assert that the function of the vignettes must be considered in relation to internal, external and construct validity.

In this research programme the vignettes were drafted to stimulate the respondent sense of risk by systematically introducing positive risk-taking barriers or facilitators. This function of this risk simulation is a facet of construct validity, or the degree to which a variable approximates or measures the intended theoretical construct. In conceiving that risk is not a constant phenomenon, constructing the vignettes to elicit changeable levels of risk was hypothesised to independently exist in the real world. This elicitation function relates to the vignette's internal validity as a data collection instrument. In a factorial survey the vignettes internal validity is vitally important to measure the degree to which changes in the dependent variable (decisional outcome) can be accurately attributed to changes in the independent variable (i.e., manipulation of the positive risk-taking barriers). In this context, the vignettes should produce results that generalise to true to life situations involving positive risk-taking barriers for occupational therapists conducting discharge to home assessments and this reflects external validity. However, this had to be achieved without introducing any unnecessary situational context. As such, a minimal amount of situational information was used and was kept constant in each vignette. This information related to the participants name, there age group, their medication management, their level of ADL performance, the severity of their cognitive impairment and a brief description of their fall's history.

In the context of drafting the vignette this information was formatted consistently and in order, starting with the occupational therapy role, the client, before introducing the contextual and experimental aspects within the vignette. Additionally, this information was constructed to represent an appropriate level of essential information and stimulus for the respondent to formulate a clinical picture. A draft of the vignette frame (without using a client name and or specific reference to gender) can be seen at Table 12 (Study vignettes and factors).

5.2.2.5 Stage 5. Evaluation and advisory guidance

The final version of the experimental vignettes included four facilitators and four positive risk-taking barriers which could be substituted without creating conflict or illogical combinations. Gould (1996) suggest that the final vignettes should be submitted to a panel of experts for further review and revision in order to improve the vignettes' clarity, cultural neutrality, and validity. The vignettes had a total of 16 potential combinations (vignette cells) of positive risk-taking barriers or facilitators, this required eight vignettes to represent these combinations. The introductory vignette and the eight experimental vignettes were prepared for expert evaluation. All participants during the Phase 2 NGT study had agreed to act in an advisory capacity throughout vignette construction. Prior to contacting the NGT participants an evaluation questionnaire was constructed and a mock electronic survey containing the eight vignettes was created. The introduction to the survey included participant information and a participant consent screen. However, the nature of the factorial survey methodology was not disclosed to the expert reviewers.

Table 12. Study vignettes and factors

Sections	**Text**	
Vignette introduction	You attend a pre discharge home assessment for Mr/Mrs XXXX, he/she is in his/her 80's and currently manages his medication for two or more medical conditions. He/she has some difficulty performing his/her activities of daily living and has a mild to moderate cognitive impairment. He/she has fallen but not within the last year. Additionally, you consider the following during your risk assessment: -	
	Barriers	Facilitators
Factors (& Levels)	• You are concerned that your recommendations will not be fully understood and carried out as intended • The client's family do not want any risks to be taken resulting from discharge • You feel if something goes wrong there is a blame culture within the organisations or from colleagues you are coordinating discharge with • The family can provide no consistent support after discharge	• There is a good level of understanding to carry out your recommendations as intended • The client's family do understand that risk is something to be managed • There is no blame culture within the organisations or from colleagues you are coordinating discharge with • The client is receiving support from their family

Evans et al. (2015) assert that as far as possible, the reviewers should be kept blind to the exact nature of the experimental methods and do not need to know anything about the factorial survey methodological approach or how the vignettes fit into the larger experimental design.

The evaluation form was constructed to include expert evaluation of the participant information, survey organisation, study objectives, (albeit the exact nature of the experiment was omitted) presentation and communication and a section for any other comments. Apart from the other comments section, each section comprised of a 5-point interval scale from 'Needs improvement' to 'Excellent' for the expert panel to rate each section. At the end of each section a blank area for comments was included for the reviewer to write evaluation notes to support their ratings. Additionally, each section had sub questions to prompt the reviewer to consider important construction elements of the vignettes and or survey design. In this context, the evaluation form was designed in relation to internal, construct and external validity. A survey web link was provided together with a blank copy of the evaluation form to each of the expert reviewers by email.

With respect to threats to internal validity, researchers can include items that serve as manipulation checks to determine the degree to which the vignette text elicited the desired effect (Aguinis & Bradley, 2014; Evans et al., 2015; Sauer et al., 2020b). To prevent issues with the vignette's internal validity, the evaluation form 'study objectives' section asked the expert reviewers whether their risk judgment had been tested. This was an important aspect in order to confirm the capacity of each vignette to

cause a risk assessment response and whether the vignette information could consistently invoke a decision under risk, thereby, confirming internal validity.

It was vitally important for the hospital to home discharge scenario in the vignettes to accurately portray this area of practice. This includes that the hypothetical scenario resembled clients and situations that occupational therapists and occupational therapy students may encounter in real life. As such, the accurate depiction of this area of practice would confirm construct validity in the vignettes (Evans et al., 2015). Moreover, ensuring internal and construct validity is likely to promote external validity, that being, the vignette respondents' hypothetical behaviour can be associated or is similar to their real behaviour making the research findings generalisable (Evans et al., 2015). In this context, the expert viewers were asked to evaluate whether they thought the vignettes represented typical occupational therapy examples.

5.3 Vignette evaluation feedback

Three of the expert reviewers (NGT participants) returned a completed evaluation form. The results were analysed individually and collectively to ensure any emerging themes were identified. All rankings achieved a score of 4 or a 5 (excellent), however, two forms were not fully completed, and some comments sections were not used. The reviewers indicated that the participant information and survey organisation was fit for purpose and well presented. Also, that the eight variations of the vignettes took approximately 45 minutes to complete. In the context of internal validity, all the reviewers that commented felt their risk judgments had been tested albeit one reviewer

felt face to face contact with a client would have influenced their decision. In the context of the hypothetical client's cognitive impairment one reviewer confirmed the vignettes invoked thoughts on how they would mitigate the risks and what approaches they would employ. In relation to construct validity, the reviewers commented that the vignettes contained relevant areas of risk and therefore represented real life. Additionally, one reviewer stated the vignettes would be an excellent educational tool for occupational therapy students prior to fieldwork placement in the community. This supported the external validity of the vignettes to produced generalisable findings as part of a factorial survey.

Areas for improvement were to provide context relating to the falls history and to consider using other practice settings other than a client's home. One reviewer stated the font size of the vignette text was too small. The inclusion of a falls history and increasing the text font size were included in the final vignette construction. The practice setting was not varied as a discharge to home scenario could not be changed during the survey for each participant as this would have conflicted with the experimental method used. A copy of the evaluation form can be seen at Appendix 7.

5.4 Chapter summary

Vignette construction included an introductory vignette as part of a continuous narrative approach. This narrative continued in the experimental vignettes. These vignettes were structured into contextual, controlled, and experimental information to test the effect strength of four positive risk-taking barriers across different levels of occupational

therapy experience. Additionally, they have been evaluated by experienced intermediate care occupational therapists for validity. As such, the aims of this chapter have been achieved.

Vignette design has been discussed in relation to psychometric considerations to ensure the empirical validity of the factors (psychological constructs) and in relation to the psychometric paradigm as a means to assess hazard risk aversion between different levels of experience. In this context, vignettes offer a practical and effective way to investigate what positive risk-taking barriers (factors) have the most effect strength at different levels of occupational therapy experience.

This chapter has outlined an approach to vignette design, and discussed the challenges when deciding upon content, style and presentation. It is a limitation of vignette methodology that not all factors that potentially could influence a decision under risk can be constructed within a vignette. This points to the importance of reviewing the literature, primary research, and clinical experience to provide the most relevant decisional factors. Moreover, employing a systematic process to construct and evaluate vignettes for validity is important to promote their effectiveness as part of a data collection instrument in a factorial survey. A strength of this programme of research is that all of these approaches have been employed to ensure internal, construct and external validity of the vignettes.

The evaluation by experienced intermediate care occupational therapists has provided useful information relating to how the vignettes have performed when presented in a

survey. The time taken to evaluate the vignettes in a survey format (45 minutes) is a potential indication that the vignettes set will have to be reduced to mitigate survey drop out and reduce the potential for respondent cognitive burden. In the next chapter this will be re-visited in relation to adopting a robust approach to ensuring that such survey time and respondent cognitive burden is minimised without detrimentally effecting the rigour of the factorial survey approach. Additionally, the next chapter will discuss how this programme of research has used these vignettes as part of a factorial survey before discussing its methods and findings.

Chapter 6 – Investigating the effect strength of positive risk-taking barriers on discharge decisions in occupational therapy intermediate care: A factorial survey

6.1 Introduction

The last study in this research programme is a factorial survey and it has been informed by the findings of the previous studies. Positive risk-taking has been presented as a necessary part of older adult intermediate care occupational therapy, especially, between the interface of hospital and home. Occupational therapy students being introduced to autonomous practice and occupational therapists have to make these kinds of decisions. There are known areas of common risk (i.e., falls, discharge) and positive risk-taking barriers which make positive risk-taking challenging in an intermediate care context. Experienced intermediate care occupational therapists have identified and ranked the most prevalent positive risk-taking barriers, confirming they feature into their clinical reasoning and decision making emphasises their importance and relevance for further study. It is also apparent from the literature reviewed that making positive risk-taking decisions can be strongly influenced by socio-cultural factors and personal traits, such as, experience. This presented a research challenge to investigate these imperatives.

The purpose of this final study was to determine the effect of the positive risk-taking barriers on a decision to support discharge to home. It aims to highlight the relationship between the positive risk-taking barriers and their single or combined relationship with the decisional outcome. These findings were then compared to elucidate which barriers had the most effect strength on Novices, Semi-experts, and Experts and in relation to how likely (or not) they were to recommend a home discharge. In this context, and as discussed in Chapter 3, risk is considered a real phenomenon and despite the subjective nature of forming judgements its predicted effect must be rationalised and objectified in

occupational therapy before positive risk-taking can be employed. Harries and Harries (2001) assert that judgement analysis is not reliant on elucidating an individual's subjective interpretations, insight or determining to what degree a process is either automatic or unconscious. Rather, they argue, it is the statistical analysis between the information available and the decision made. Put differently, the cause (positive risk-taking barriers) and effect (decisional outcome) can be modelled irrespective of the exact thought process behind the decision. To measure the effect of one or more factors required a research methodology that promotes non-orthogonality thereby minimising extraneous variables that may be introduced and lead to problems with disentangling their affects during analysis. In this context experimental method is required to manipulate and control such factors and such an approach is used in a factorial survey.

Occupational therapists make life changing decisions on a daily basis and there are factors which challenge such decision making, especially, when risks are involved. The way in which factors (positive or negative) really effect decision making in clinical situations is difficult to determine and is beyond many research methodologies in relation to measuring their effect strength and relationship in the context of a risk related decision. It is important to remember that assessing the impact of risk factors on a client and their caregivers is a natural and required part of occupational therapy provision. The focus on determining which factors or combination thereof effect decision making with the advantages of experimental and survey design warrants factorial survey methodology. The factorial survey is a unique and key aspect of the overall work in this programme of research. Additionally, elucidating the effect strength of the positive risk-taking barriers on a discharge to home decision at different levels of experience offers useful information to intermediate care practice and occupational therapy educators

whilst providing a foundation to build future occupational therapy risk perception research in relation to positive risk-taking.

In the previous chapter, the systematic construction of vignettes was presented. It outlined the rationale for using a textual continuous narrative, an adapted text and table presentation style, a discharge to home clinical scenario and how the content of the vignettes was identified and prioritised. This included which positive risk-taking barriers were selected as part of the experimental aspect of the vignettes. In the first part of this chapter this study's methods will be presented. The methods section will discuss the rationale for selecting the factorial design and explain the factorial survey process before presenting the key areas of the study, those being, the sample, data collection, pilot study, analysis, results, and discussion.

6.2 Methods

This study was approved by the Northumbria University's Research Ethics and Governance online approval process, reference 28964 refers. Information was provided to potential participants prior to taking the survey and this included the study's risks and benefits and that their participation was voluntary. Participants were required to read this information and indicate they understood as part of consenting to take the survey. Moreover, participants could not proceed in the survey without providing consent. As reported in Chapter 2, the aims of the factorial survey were to: -

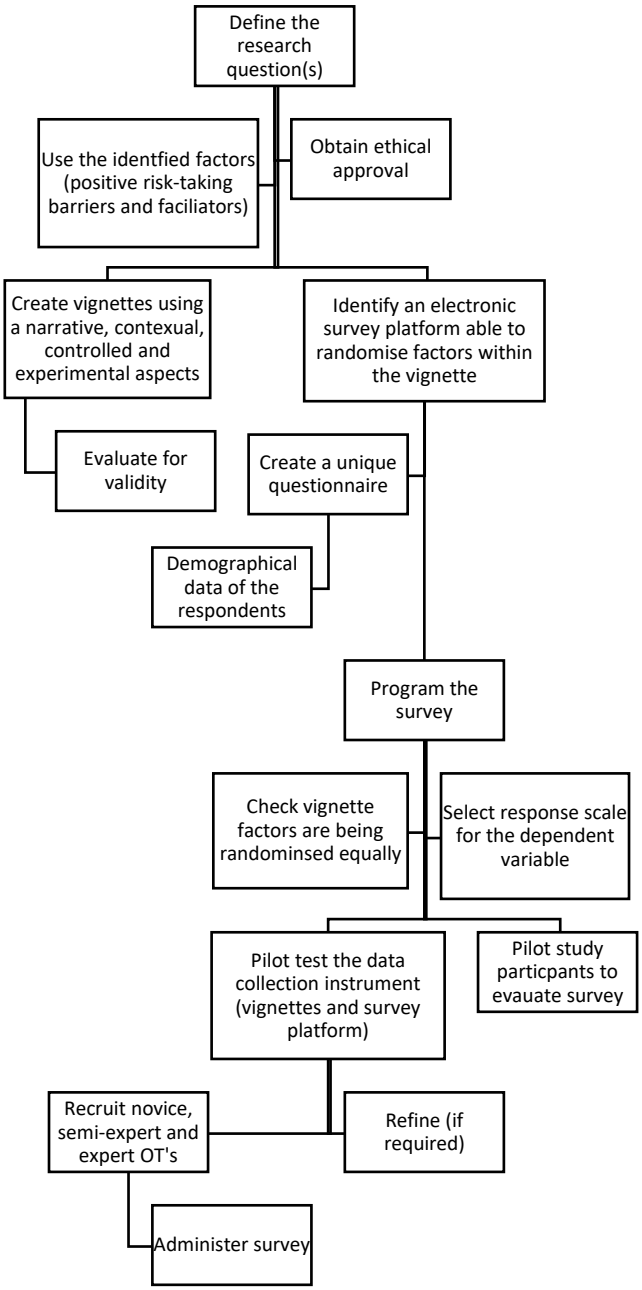
- To investigate the effect strength of positive risk-taking barriers across different levels of occupational therapy experience

Based on the work in the preceding chapters, four positive risk-taking barriers were identified. For reporting purposes, the positive risk-taking barriers were written in short as, Limited Capacity, No Support, Risk Averse Family and Blame Culture. The different levels of experience were established to be Novice, Semi-expert, and Expert. In relation to these groups, the factorial survey also sought to: -

- To identify which group is more or less likely to recommend a home discharge by comparison.

Taylor (2005) asserts that the process from designing to administering a factorial study must include several important stages which are sequential and necessary for rigour. These include, to define the research question, identify the vignette factors, create vignettes, obtain ethics approval, pilot to ensure clarity and realism, create a unique questionnaire, and administer. This process was adapted and used to create the factorial survey in this research programme. The stages of this process can be seen at Figure 6.

Figure 6. Factorial survey process



6.2.1 Sample

Risk perception studies have previously concentrated on elucidating the differences between lay and expert levels of experience (Breakwell, 2007). There are many occupational therapists that are neither novice nor experts in older adult intermediate care provision. There are known differences in judgments and decision-making capacities between novice, semi-expert and expert experience levels (Harteis et al., 2012, Hubscher-Davidson, 2013, Murray et al., 2011, Murray et al., 2013). In this context, it is likely that occupational therapists with a semi-expert level of experience will perform differently to that of novices and experts in relation to the factorial survey vignettes. This supports sampling occupational therapists at novice, semi-expert, and expert levels of experience to participate in the factorial survey.

Occupational therapy students and occupational therapists were recruited from two university pre-registration programs, the Royal College of Occupational Therapists Specialist Sections – Older People and Trauma and Musculoskeletal Health. Additionally, occupational therapy related social media was used for recruitment. All participants were asked to categorise themselves into whether they believed they were a novice or semi-expert, or expert in older adult occupational therapy. No other demographic information was sought.

As the purpose of this study was to determine the effect of the factors on the decisional outcome (dependent variable), multiple regression analysis was used and informed the sample size. In relation to this analysis method, *a priori* power analysis was conducted using G*Power version 3.1.9.7 (Faul et al., 2009) to determine the minimum sample size required to test whether the four independent variables would produce an effect on the dependent variable (likelihood to recommend a home discharge). The required sample size to achieve 80% power for detecting a medium effect, at a significance criterion of $\alpha = .05$, was n =85 participants. The sample size was also informed by the fact that in a factorial survey the unit of analysis is each vignette and not the participant (Ludwick et al., 2004) as such a minimum of 85 answered vignettes would be required for each group (Novice, Semi-expert, and Expert).

Prior to taking the survey the participants were provided with information advising them of the purpose of the study, the data collection, and data storage methods. This information also informed the participants about their right to withdraw, confirmed the survey platform was GDPR compliant and that the study had been granted ethical approval. Additionally, the participants were required to consent to take the survey prior to providing any demographic information or answering the vignettes.

6.2.2 Data collection

The factorial survey consisted of three sections, an introduction (participant information, demographic information, and consent), a background vignette and survey vignettes. The background vignette was the same for all participants and served to

orientate the participants to their hypothetical role. This role was that they were an occupational therapist in a multidisciplinary team conducting hospital to home discharge assessments alongside carers, family, and other healthcare workers. Additionally, the background vignette informed the respondent there were four arranged assessments (vignette scenarios) and that they had determined a moderate level of risk in each. As such, occupational therapy was made explicit, however, further considerations of the four factors were required in the context of the changeable variation of each vignette scenario. The survey platform was programmed to randomly allocate the factors in order to provide changeable variation in each vignette, thereby, introducing unique combinations of positive risk-taking barriers or facilitators.

All participants were then invited to answer four survey vignettes, these vignettes were arranged into an introduction paragraph followed by the positive risk-taking barriers (factors) written as four bullet points. The four factors were split into two levels with each barrier having an opposite facilitator; this represents a 2x2x2x2 design which produced 16 possible vignette combinations for randomisation. Randomisation is one of the methods researchers often rely on to reduce the effect of bias and it is used to remove or mitigate sources of extraneous variation (Altman, 1991). As per the study design, this meant there would be no repetition of a vignette scenario for any of the individual participants answering the survey. Additionally, for each participant two vignettes related to a male client and two vignettes related to a female client. The vignette introduction and factor levels can be seen in Table 13 (Vignette text and factor levels).

Table 13. Vignette text and factor levels

Vignette and factors	Vignette text and integration of the factor levels	
Survey vignette Four each factor, 2 levels were randomised to be either a barrier or facilitator Levels	You attend a pre discharge home assessment for Mr/Mrs XXXX, he/she is in his/her 80's and currently manages his/her medication for two or more medical conditions. He/she has some difficulty performing his/her activities of daily living and has a mild to moderate cognitive impairment. He/she has fallen but not within the last year. Additionally, you consider the following during your risk assessment: • Factor 1 (Limited Capacity or Capacity) • Factor 2 (Risk Averse Family or Risk Accepting Family) • Factor 3 (Blame culture or No Blame Culture) • Factor 4 (No Support or Support)	
	Barriers	Facilitators
Factor 1	You are concerned that your recommendations will not be fully understood and carried out as intended	There is a good level of understanding to carry out your recommendations as intended
Factor 2	The client's family do not want any risks to be taken resulting from discharge ·	The client's family do understand that risk is something to be managed
Factor 3	You feel if something goes wrong there is a blame culture within the organisations or from colleagues you are coordinating discharge with	There is no blame culture within the organisations or from colleagues you are coordinating discharge with
Factor 4	The family can provide no consistent support after discharge	The client is receiving support from their family

The scale of measurement for the dependent variable, the likelihood to recommend a home discharge, was chosen in relation to the research question and to ensure there was sufficient variance to measure the dependent variable. Taylor (2005) suggests using an interval scale for measuring risk judgments. Moreover, Ludwick et al. (2004) posit dependent variables in factorial surveys require interval scale measurement. Using an interval scale of numbers sequenced equally is linear and this is advantageous when interpreting the results, especially, as factorial surveys commonly use regression analysis. Dawes (2008) found that 5, 7, and 10-point interval scales performed equally in a regression analysis with little variation other than the 10-point scale producing lower means scores in some cases. A 7-point interval scale was selected as the dependent variable measurement scale. At the end of each vignette, the participant was asked to rate the likelihood of whether they would recommend a home discharge on a scale from 1 (Not Likely) to 7 (Very Likely). In this context a neutral response would equate to 4, this outcome was interpreted as being undecided whether to (or not to) recommend a home discharge.

6.2.3 Pilot study by test-retest.

Test and retesting the survey was important to this study to establish whether the survey platform and its randomisation function was operating, also it was important to understand whether the participants answer similarly given the same vignettes and questions. Clarifying whether the same participants had the same response to a risk prone situation is beneficial to understand the risk did have some impact on the decisional outcome and whether this impact is more than by chance. The test-retest

method as performed in an intra-class correlation coefficient test was appropriate for this pilot study. In this context, the reliability of the vignettes and survey platform as the data collection tool was evaluated using intraclass correlation coefficient analysis as provided in IBM SPSS. Moreover, the Intraclass correlation coefficient test is a widely used reliability index in test-retest, intrarater, and interrater reliability analyses (Koo & Li, 2016).

An individualised survey and weblink for each participant were created. The participants were instructed that the survey was to be completed twice, leaving a minimum of 7 days before taking the survey for a second time. The second survey was a duplicate of the first and was sent to each participant after the 7 days had expired. The pilot study participants also completed an evaluation form to comment on the survey presentation, whether the completion time was realistic and whether they felt their risk judgments were tested.

Three occupational therapy students studying at pre-registration level and five post registration occupational therapists were recruited for the pilot study using a convenience sampling method. The eight (n=8) participants completed two surveys with seven days in between first and second completions. Both sets of survey results were compared using the ICC method. The ICC in this study was calculated using single ratings, absolute agreement, a 2-way mixed effects model with 8 participants providing 32 responses for each vignette.

A good degree of reliability was found between the same raters when comparing each of their individual responses on these two occasions. The average measure ICC was .858 with 95% confidence interval from .729 to .928, ($F (31/31) = 12.713$, $p<0.01$). Additionally, participant feedback from the five returned evaluation forms confirmed the pilot survey took between 10 to 20 minutes to complete, the vignettes portrayed realistic risk-prone discharge scenarios, the survey was presented clearly and there was sufficient participant information for consent. The evaluation forms were returned by email. The evaluation form can be seen at Appendix 7.

6.2.4 Analysis

Multiple regression is commonly used for factorial survey analysis, as it allows the assessment of the relationship between the independent variables (IVs), and between the IVs and the dependent variable (DV) (Hox et al., 1991; Ludwick et al., 2004; Taylor, 2005). In this part of the chapter regression analysis will be presented and discussed in relation to the hypotheses used in this study. Simple linear regression will be discussed first before introducing multiple regression theory and the rationale for using a direct regression model. Additionally, the rationale for conducting a One-way analysis of variance (ANOVA) will be presented and discussed.

Simple linear regression could be considered as drawing a line on a graph through a set of data in order to model information. This type of model includes a ‘y’ variable (dependent variable) and one ‘x’ variable (independent variable). The linear regression model seeks to explain the behaviour of the dependent variable in relation to changes in

the independent variable. As such a simple linear model can predict changes in relation to both variables and this is indicated as ‘a line of best fit’. The angle of the line indicates how strong the relationship is and whether such changes are positive or negative. A positive slope would represent a sample of data which increased both y (vertical axis) and x (horizontal axis) variables (relatively equally) and a negative slope occurs where y decreases when x increases (Cohen, 2015, Field, 2017).

In the context of the factorial survey and taking one independent variable, ‘Limited Capacity’, it is likely that as a service user demonstrates less understanding there is less scope for employing positive risk-taking. Arguably, there is a linear relationship. This relationship is also the assumption for each of the other IV’s (positive risk-taking barriers). Considering that each positive risk-taking barrier is either present or not (presented as a facilitator) gives two values therefore creating scope for linearity in the context of these values being regressed onto the dependent variable. Basing that data set on a sample and not the complete population, this can be represented mathematically as:

$$y = a + b_1 x_1$$

The value of ‘y’ (likelihood to recommend a discharge) is equal to the intercept at the y axis, represented as ‘a’, and this value is added to ‘b_1’ (the gradient) multiplied by ‘x_1 ‘(the positive risk-taking barrier, Limited Capacity).

Multiple regression is an extension of this, whereby, a model is used to explain the behaviour of 'y' (dependent variable) in terms of two or more 'x' variables (independent variables) (Cohen, 2015). Multiple regression also allows the overall fit to be determined (variance explained) and the relative contribution of each of the independent variables (positive risk-taking barriers) to the total variance explained. Put differently, the model's purpose is to effectively predict the dependent variables variance. Multiple regression identifies the value of the coefficients (values multiplied against the IV's) that have contributed (or not) to this change (Cohen, 2015). In this context, the regression model for this factorial survey study is:

$$y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4$$

Multiple regression analysis was conducted for the Novice, Semi-expert and Expert data sets separately to elucidate the effect strength of the positive risk-taking barriers. Therefore, the results were used to report upon the barriers and not the facilitators.

Multiple regression is subject to the following assumptions, 1) Linearity between the IV's and DV; 2) No multicollinearity; 3) Independent observations; 4) Homoscedasticity; 5) Normally distributed residuals; 6) No influential responses biasing the analysis/model; (Cohen, 2003, Osborne and Waters, 2002). These assumptions can be tested as part of multiple regression in IBM SPSS. If these assumptions are met will also support the One-way ANOVA test, being that its assumptions are 1) Independent observations; 2) Normality; 3) Homogeneity (equal variances). Statistical assumption

tests were conducted, their results and the rationale for then being met, albeit, with some limitations can be seen at Appendix 8.

As this factorial survey study did not seek to optimise a regression model to best explain the variance in the dependent variable, a direct regression model method was chosen. There are many potential regression methods within IBM SPSS that are appropriate when attempting to establish a model of IV's which explain the most variance in the dependent variable. This was not necessary for this study as it was not appropriate to establish such a model for positive risk-taking barriers. In this context a direct multiple regression method was used and this is also sometimes referred to as an 'Enter' method when using IBM SPSS. Using this direct regression method introduces all of IVs at once and this could mean that some of the IVs are not statistically significant detracting from the model's ability to explain the variance in the dependent variable. Entering all the IV's together in a direct regression method is also conducive with establishing hypotheses for each individual IV. Where all IVs are included equally within the model allows for each to be judged against a hypothesis based on whether they are statistically significant or not. Multiple linear regression uses the following null (H_0) and alternative (H_A) hypotheses:

- H_0: $b_1 = b_2 = b_3 = b_4 = 0$
- H_A**:** $b_1 = b_2 = b_3 = b_4 \neq 0$

The null hypotheses states that for each IV (X_1, X_2, X_3, X_4) the 'b' coefficient is equal to zero (not statistically significant). In juxtaposition, the only difference between these

two expressions is that the alternate hypothesis provides that not every coefficient is simultaneously equal to zero (≠). Statistical significance was determined using a probability value (p-value) of p=0.05. Where the multiple regression determines values for each coefficient less than p< 0.05 this would indicate statistical significance and the null would be rejected (as measured for each IV). Conversely, where any of the b coefficients are more than p>0.05, this means we retain the null hypothesis and reject the alternative hypothesis (Cohen, 2015). Put differently, rejecting the alternate hypothesis would mean the positive risk-taking barriers were not found to have any statistically significant effect on a decision to discharge to home. Setting the alpha value (probability threshold value) at $\alpha = 0.05$ is important in relation to the two multiple regression hypotheses (H_0, H_A), that being, a Type 1 error (the possibility of observing a difference when there is none) or Type II error (failing to observe a difference when one exists). Moreover, this helps clarify research parameters including determining sample size, such approaches were used by (Brenner, 2013, Brenner et al., 2015) in their factorial survey design.

The reporting of the 'b' coefficients which were statistically significant in the findings was important and helped determine the positive risk-taking barriers that had the most effect strength as per the research question. In addition, the collective effect of the IVs (model) was reported using the coefficient of determination (R^2) value. The coefficient of determination is presented as a value between 0.0 and 1.0. The closer it is to 1, the stronger the correlation (capacity to exert change in the dependent variable). As previously discussed, it would not be useful or appropriate to establish a model of positive risk-taking barriers in relation to their group effect on a discharge to home decision. Moreover, this is not a requirement to answer the research question, however,

it is important in the reporting of multiple regression, the benefit being a strong correlation will highlight the importance of the positive risk-taking barriers in the model and their propensity to exert change of the dependent variable. Inferences can then be drawn to their importance to other risk related decisions in occupational therapy intermediate care. Put differently, positive risk-taking barriers have a universality and in the context of occupational therapy it is the risk of harm to the client and not the specific area of practice (discharge) provoking risk avoidance.

The independent variables in the survey produced nominal data relating to the positive risk-taking barriers and facilitators. The data analysis must include a process of transforming this data into numerical values as nominal data cannot be used for regression analysis (Field, 2017). Therefore, each IV was dummy coded (dichotomously) indicating a ‘0’ for the positive risk-taking facilitator and ‘1’ for the positive risk-taking barrier. Using this method, it was possible to select the numerical values of the positive risk-taking barriers and regress these to investigate the variance in the dependent variable.

As part of the final statistical test in the data analysis plan and to identify which group was more or less likely to recommend a home discharge, a One-way ANOVA was an important test to indicate whether such a difference could be considered statistically significant. A One-way ANOVA is a parametric test used to compare the means of two or more independent groups to determine whether there is statistical evidence that the associated population means are significantly different.

In summary, multiple regression analysis was used for Novice, Semi-expert and Expert data sets separately using the 'Enter' method on IBM SPSS Statistics v.27. The multiple regression was conducted to determine the effect strength of the barriers to positive risk-taking (i.e., Limited Capacity, Risk Averse Family, Blame Culture and No Support) on the dependant variable. Additionally, a One-way analysis of variance (ANOVA) was performed using IBM SPSS Statistics v.27.

6.3 Results

A total of 109 participant responses were recorded with 74 participants answering one or more of the vignettes. This confirmed a moderate pre-survey dropout rate of 35 (32%) participants. Twenty-two (n=22) 26% participants indicated they were occupational therapy students and sixty (n=62) 74% indicated they were qualified occupational therapists. Participants self-categorised their experience level into Novice, Semi-expert or Expert in older adult occupational therapy. Eight (n=8) Novices indicated they were post-registered occupational therapists, two Semi-experts indicated they were occupational therapy students (pre-registration), all Experts were occupational therapists (post registration). Twenty-three (n=23) Novices answered 87 vignettes, twenty-six (n=26) Semi-experts answered 99 vignettes and twenty-five (n=25) Experts answered 95 vignettes, 281 vignettes in total were answered.

The positive risk-taking barriers (independent variables) were entered together as a model to investigate their combined and individual effect. All positive risk-taking barriers produced a negative effect overall and reduced the likelihood of recommending

a discharge to home for an older adult. Additionally, their collective effect as a model was statistically significant in all groups.

In the Novice group, this model explained 21.9% variance in the likelihood to recommend a discharge to home (R^2 = 0.219, F (4,82) =5.734, p< 0.001). Out of the fours IV's in this model, two were found to be statistically significant, No Support (β = -.315, p=0.002) and Limited Capacity (β = -.305, p<0.003). A negative coefficient was observed for the IV's confirming their presence reduced the likelihood to discharge. Holding all IV's constant, those that were statistically significant in the model were observed to reduce the DV by at least one point on the seven-point scale, for No Support (B= -1.063, CI -1.734, -.392) and for Limited Capacity (B= -1.031, CI -1.713, -.349). The IV's in the Novice multiple regression model were ranked in relation to their statistical significance, see Table 14.

Table 14. Novice group, multiple regression analysis and factor ranking.

Ranking	**Factor**	**β**	**p-value***
1	No Support	-.315	.002
2	Limited Capacity	-.305	.003
3	Risk Averse Family	-.087	.399
4	Blame Culture	-.069	.487

*(Two tailed)

In the Semi-expert group, this model explained 23.5% variance in the likelihood to recommend a discharge to home (R^2 = 0.235, F (4,94) =7.238, p< 0.001). The factors, No Support (β = -.313, p=0.001), Limited Capacity (β = -.254, p=0.006) and Blame

Culture (β = -.240, p=.010) were found to be statistically significant. These factors produced a negative coefficient on the DV. A decrease in the DV by over 1 in the 7-point scale was found for No Support (B= -1.087, CI -1.723, -.450), this effect was less for the Limited Capacity (B= -.877, CI -1.500, -.254) and the Blame Culture (B= -.831, CI -1.456,-.207) independent variables. The IVs in the Semi-expert multiple regression model was ranked in relation to their statistical significance, see Table 15.

Table 15. Semi-expert group, multiple regression analysis and factor ranking.

Ranking	**Factor**	**β**	**p-value***
1	No Support	-.313	.001
2	Limited Capacity	-.254	.006
3	Blame Culture	-.240	.010
4	Risk Averse Family	-.076	.413

*(Two tailed)

In the Expert group, this model explained 21.8% variance in the likelihood to recommend a discharge to home (R^2 = 0.218, F (4,90) = 6.254, p< 0.001). The factors, Limited Capacity (β = -.376, p=0.001) and No Support (β = -.254, p=0.009) were found to be statistically significant. These factors produced a negative coefficient on the DV. When the Limited Capacity (B= -1.173, CI -1.768, -.579) factor was present this caused the DV to decrease by over 1 in the 7-point scale, this effect was not as strong in the No Support independent variable (B= -.799, CI -1.394,-.205). The IV's in the Expert multiple regression model were ranked in relation to their statistical significance, see Table 16.

Table 16. Expert group, multiple regression analysis and factor ranking.

Ranking	**Factor**	**β**	**p-value***
1	Limited Capacity	-.376	.001
2	No Support	-.254	.009
3	Blame Culture	-.169	.078
4	Risk Averse Family	.029	.758

*(Two tailed)

The One-Way ANOVA test found the Novice group were neutral being neither unlikely or likely to recommend a home discharge, with a mean of 4.28. The Semi-expert and Expert group were likely to recommend a home discharge with a mean of 5.03 and 5.45, respectively, see Table 17.

Table 17. Dependent variable mean differences by experience level

Group /Experience Level	N	Mean	Std. Deviation	Std. Error
Novice	87	4.2874	1.69752	.18199
Semi Expert	99	5.0303	1.73473	.17435
Expert	95	5.4526	1.56945	.16102
Total	281	4.9431	1.72905	.10315

A One-way ANOVA revealed that there was a statistically significant difference in the likelihood to recommend a home discharge (DV) between at least two groups (F (2,278) =11.279, p=0.001). Multiple comparison analysis of the One-way ANOVA results confirmed statistical significance between the means of Novice and Semi-experts (p=0.008 CI -1.33,-0.15) and Novice and Experts (p=0.001 CI -1.76,-0.56) but not

between Semi-experts and Experts. Additionally, Novices were the least likely to recommend a discharge by comparison.

6.4 Discussion

This factorial survey has afforded a means to investigate a number of positive risk-taking barriers in relation to discharge decisions made by occupational therapists; these would be difficult to investigate in occupational therapy practice. It has identified the effect strength of the positive risk-taking barriers (Limited Capacity, Risk Averse Family, Blame Culture and No Support) on the likelihood to recommend a home discharge in relation to three different occupational therapy experience levels, Novice, Semi-expert and Expert. It has also found that these experience levels have different propensities to discharge in relation to these barriers. The Novice group were least likely to recommend a home discharge in relation to the positive risk-taking barriers in comparison to the Semi-expert and Expert groups, indicated by their neutrality to recommend a home discharge.

The effect strength of the 'No Support' and 'Limited Capacity' factors on all groups was statistically significant. The 'Blame Culture' factor was statistically significant on the decisions of Semi-experts only. The 'Risk Averse Family' factor related to the client's family not supporting risk taking and this was found not to have any significant effect on any of the groups' decisions whether to recommend a home discharge. This finding may be related to the client's capacity to make decisions in the vignette scenario, albeit, with some limitations and concerns to whether they fully understand. In

this context, a client with no or very limited capacity to make decisions relating to the risks they will face at the point of discharge may have changed this outcome. However, the Risk Averse Family factor in combination with the other factors did produce a statistically significant effect to reduce the propensity to recommend a discharge in all groups.

In both the Novice and Semi-Expert groups, 'No Support' was the factor which was found to have the most effect strength, and for Experts this was second to 'Limited capacity'. Previous literature also highlights the importance of lack of support in this area. Zurlo & Zuliani (2018) assert that discharge planning starts with a patient's admission, finishing with the patient being discharged to a setting able to support them in the best way possible. Moats & Doble (2006) postulate, individuals are discharged from acute care hospital settings after brief stays, and in some cases, before adequate supports have been put in place or steps taken to reduce risks. In their systematic review on the risk factors associated with hospital readmission, García-Pérez et al. (2011) found that poor family support was a risk factor for three or more hospital readmissions over a period of 6 months. This is consistent with the finding from this study that 'No Support' was a significant factor in reducing the likelihood of a recommendation to discharge across all occupational therapy experience levels.

In the Expert group, 'Limited Capacity' was found to have the strongest effect strength on a decision to discharge to home and was second to 'No Support' in the Novice and Semi-expert groups. Previous research has shown that older adults leaving hospital can be highly variable to rehabilitation (McIntyre & Atwal, 2005) and those with 'limited

capacity' through diseases like dementia can exhibit many unsafe behaviours which are hard to predict, be resistant to changing such behaviours or have difficulty complying with interventions targeted to keep them safe (Lach & Chang, 2007).

The implications of this are complex. Having decision making capacity is a prerequisite for understanding the potential benefits and harms in occupational therapy interventions which employ positive risk-taking strategies. In the context of discharge decisions, Moats (2007) found occupational therapists described the need to strike a balance between maintaining safety and respecting autonomy. However, where clients were cognitively impaired but not officially 'incompetent' (a situation which occurs frequently), the processes described by therapists were more complex and ill-defined (Moats, 2007 p.96). Morgan & Andrews (2016) assert, mental capacity is specific, not a generalized attribution to a person; so, a focus on a person's understanding of the choices and consequences should be related to a specific decision and 'enabling' people should focus on capability rather than disability. This is an important tenet of the Mental Capacity Act 2005 (Legislation.gov.uk, 2005) but its implementation in relation to positive risk-taking has suffered from a lack of awareness of its central role (Morgan & Andrews, 2016). Moreover, when autonomy promotion is the prevailing consideration and decisional control rests with the client this can become challenging when risks are high, as such, these situations may result in ethical dilemmas (Moats & Doble, 2006). Such dilemmas occur when promoting a client's autonomy may also mean that safety cannot be assured, optimised, or completely reconciled within the complexity of a client's occupational routine. Unpredictable and unsafe client behaviours makes assessing risk particularly challenging and with the potential to cause ethical dilemmas is likely to explain why the 'Limited Capacity' factor had a strong effect in all groups

and the most effect on Experts. In relation to the 'No Support' factor being found to be the second most influential factor on expert decisions in this study, experts may be more familiar with the types of support that can be put in place. Moreover, there are potentially many more mitigations to providing support compared to the options to mitigate a clients limited decision making capacity.

When making a discharge to home decision, 'Blame culture' was found to be a statistically significant factor in the Semi-expert group only. However, its effect strength on Experts was higher than in the Novice group. This may indicate that blame culture does not impact early career occupational therapists or student occupational therapists who either have little working experience or are perhaps more protected from such conditions whilst in practice placement and preceptorship phases of their career. The stronger effect strength of 'Blame culture' within the Semi-expert group may signify that this group feel more susceptible to being blamed for errors, perhaps as they transition from novice to more autonomous practice but before they attain higher levels of expertise.

The implications of this are important for organisations employing occupational therapists. In consulting to produce risk guidance, the Department of Health (DOH) found there is a genuine fear of adverse consequences when empowering people to take risks where, if things go wrong, blame was likely to be directed at organisations or individuals (DOH, 2007). Changing a blame culture to a learning culture is imperative to protect staff if 'true' mistakes are made, to share information and to learn (as an organisation) from practice errors or near misses (DOH, 2010).

Working within a culture of blame has been found to be associated with avoiding reporting errors owing to the fear of retribution (Okpala, 2020). Fear can be a strong 'affect heuristic' which has the capacity to alter cognitive processes, potentially biasing learning, memory and or decision making. Furthermore, Morgan (2004 p.19) states '…positive risk-taking becomes undermined, as the fears associated with a blame culture are more likely to permeate people's thinking and threaten the implementation of creative ideas.'

This study has identified that the likelihood to recommend a home discharge increases with experience and that 'Limited Capacity', 'No Support' and 'Blame Culture' are important decision influencing factors. The factor with the most effect strength on Experts was 'Limited Capacity'. A person's capacity can fluctuate and be unpredictable and this is difficult to objectify in a risk assessment to employ positive risk-taking.

In consideration of the 'Limited capacity' factor having the most impact on Expert decisions in this study, training early career occupational therapists would be advantageous in light of the complexity a client's lack of capacity brings to employing positive risk-taking. Attention to this during pre-registration courses and fieldwork placements for students is essential, as is peer support and mentorship from expert therapists to those who are new to practice to help support such decision making. Decision aids for risk assessment would also support novice practitioners' risk related decisions, especially, in the absence of expert one to one guidance. This may help novices make decisions at the level of, or close to, that of experts. In addition, concentrating on what support (or level of support) would be needed in this context

would be appropriate, especially, where a client's capacity to understand or adhere to occupational therapy interventions is in doubt. Moreover, further research on positive risk-taking with older adults during discharge would be beneficial to occupational therapy education and practice. Additionally, organisations and senior occupational therapists should be aware of the particular impact of blame culture on more junior occupational therapists as they transition to higher levels of expertise and should ensure that appropriate support systems are in place.

6.4.1 Strengths and limitations

To the researcher's (student) knowledge this is the first study of its kind to investigate the effect strength of positive risk-taking barriers in the context of an older adult discharge. It has used an innovative method (factorial survey) to embed (implicitly) and randomise the factor levels into the vignettes as part of an experimental and systematic approach. This has facilitated the elucidation of the factors which carry the most weight in relation to the three groups of occupational therapy experience (Novice, Semi-expert and Expert); however, a limitation of the study is that participants self-categorised their experience level. Despite 281 vignettes being answered in this study, there was a moderate non-completion rate of 32% where thirty-five participants did not answer one vignette. This study did not seek to emphasise the combined effect of the factors contained within the multiple regression model as a predictive model for risk. However, each of the models' proportion of variance in the dependent variable (likelihood to recommend a discharge to home) for Novices, Semi-experts and Experts were low as indicated by the R^2 values reported.

Prior to reporting the results, the data sets for each group (Novice, Semi-expert, Expert) were tested for statistical assumptions for regression and One-way ANOVA, see Appendix 8. In the context of regression, homoscedasticity of residuals was found to be a limitation. However, a visual assessment confirmed the pattern of residuals did not present a consistent or extreme pattern, also, its effect was minimal as indicated by a Loess line of fit. Likewise, the standardised residuals plotted against the predicted values confirmed issues with normality and homoscedasticity especially in the Semi-expert and Expert groups. This would impact the regression model results more than its IV's coefficient values (effect of the positive risk-taking barriers), the latter being the main study focus. The number of participants in the sample for each group, that being, over the prescribed requirement mitigated minor issues with normality in this context. These statistical assumption violations were discussed during supervisory meetings. In close examination they do not have a major effect on this study's results, however, they should be considered in relation to the broader interpretation of this study's findings, especially, in relation to the combined effect of the positive risk-taking barriers in the model.

6.5 Chapter summary

Factorial surveys have the capacity to investigate many multiple factors and levels. A balance has to be struck between design complexity and practicality. There are potentially many pitfalls in factorial design that invite the confounding of variables, non-orthogonality, and order effects. Moreover, using many factors and levels is likely to require the allocation of a large set of vignettes to assess main and interaction effects.

Potentially, this can cause cognitive burden and increased dropout rates reducing the quality of the findings. These imperatives were considered and shaped this factorial survey.

This chapter has described the design process of the factorial survey study, it has presented rationale for sampling three different groups (Novice, Semi-expert, Expert) and selecting an appropriate measurement scale. Also, it has benefited from robust vignette construction and a systematic approach. The factorial survey design, pilot study, data analysis plan and testing the data rigorously in relation to the relevant statistical assumptions gave this study a good foundation to produce quality results.

Enabling the investigation of professional decision making is a strength of factorial survey design. The factors (positive risk-taking barriers) were implicitly embedded into the vignette narrative. Such an approach is likely to reduce unreliable and biased self-reports often associated to the direct questioning of participants in research (Alexander and Becker, 1978). As such, the findings of this study could approximate decision making under risk in occupational therapy intermediate care provision at the point of discharge.

An important finding was Novices were least likely to recommend a hospital to home discharge in comparison to Semi-experts and Experts. Their propensity to be risk averse in this context is likely to reflect the risks in the vignette scenario and positive risk-taking barriers presented an unfamiliar situation, thereby, invoking a more cautious response by comparison. Moreover, novices being risk averse by comparison to experts

has been identified in elder financial abuse (Harries et al., 2014) and discharge decision making in acute care (Reich et al., 1998) occupational therapy related studies. The positive risk-taking barriers, 'No Support' and 'Limited Capacity' factors were found to have the most influence on novice decisions. These barriers reduced the decisional outcome (dependent variable) to a point where this group was neutral in their decision to recommend a discharge to home. Such neutrality is not conducive with embracing risk and recommending interventions that employ positive risk-taking. Moreover, not embracing and accepting risk is likely to inhibit service user progress or where risk is avoided create dangerous conditions where an appropriate occupational therapy risk enablement plan has not been conducted.

An important finding in relation to the Semi-expert group relates to the 'Blame Culture' factor. The Semi-expert group were affected most by this barrier with neither the Novice nor Experts being affected at the same level, albeit the Novice group were less affected in comparison to the Expert group. As discussed, this affirms that this barrier is more associated with those who are qualified and practicing occupational therapy. Also, the Semi-expert group were likely to recommend a home discharge but less likely to recommend in comparison to the Expert group. The Semi-expert group was the only group to have three positive risk-taking barriers which were found to be statistically significant. In order of statistical significance, 'No Support' and 'Limited Capacity' factors were found to have the most effect strength on these decisions followed by the 'Blame Culture' positive risk-taking barrier.

In the Expert group, ‘Limited Capacity’ was found to have the most effect strength on whether to recommend a discharge to home, followed by ‘No Support’. The Expert group response indicates that ‘Limited Capacity’ was the most relevant factor to this group in light of its statistical significance. Despite this the Expert group was the most likely group to recommend a discharge to home. These are important findings and suggest the ‘Blame Culture’ and ‘Risk Averse Family’ positive risk-taking barriers are less relevant by comparison. This may be due to experts being more resilient to a culture of blame and confident in their decision making in this context and thus being more adept at providing solutions to alleviate the concerns of a risk averse family.

In the next chapter the discussion will identify and synthesise the key findings across all studies presented in this thesis. This will help identify the wider contribution made by this programme of research and what has been learnt, could be improved and how these findings are likely to be useful for future occupational therapy risk related research. Moreover, the implications to practice and occupational therapy education will be discussed before concluding the thesis.

Chapter 7 – Discussion and Conclusion

7.1 Introduction

Occupational therapy, intermediate care and risk are multidimensional and their cooccurrence carries unique considerations and factors as presented and discussed at the start of this thesis (Chapter 1). Whilst presenting many potential paths for investigation the decisions in relation to the direction of this research programme have followed a pragmatic and logical sequence.

These decisions have been informed by and have considered that risk is a real phenomenon. Some risks and positive risk-taking barriers are more common than others. Problem solving in this context involves using factors to create a clinical picture, and risk related decision making is more veridical in experts compared to novices. Moreover, there are known differences between these levels of experience and Semi-experts in relation to judgments and decision-making capacities. In this respect, this research programme's decisions have focused on the supposition that positive risk-taking barriers affect decision making and are likely to have more impact on occupational therapy students or those in preceptorship stages of employment. Consequently, those with less experience may be less likely to employ positive risk-taking, thereby, affecting a service user's progress.

There are challenges to investigating such imperatives. Fully understanding the cognitive processes in relation to assessing such factors might arguably be beyond the reach of empirical study, especially in relation to unconscious risk perceptions, making these aspects of risk related decision-making not entirely researchable. A key decision

was to avoid such a problematic area and focus on decisional outcomes by measuring the effect strength of the four identified positive risk-taking barriers (Limited capacity, No Support, Blame Culture, Risk Averse Family) on a decision at different levels of occupational therapy experience. Elucidating the factors that have the most effect strength and pose the greatest threat to embracing positive risk-taking is likely to be of interest to occupational therapy practice, education, and its research community. This programme of research has been constructed in this context.

In developing this research programme, the scoping review (Chapter 2) and the consensus study by Nominal Group Technique (Chapter 4) provided the common areas of risk and the prevalent positive risk-taking barriers in intermediate care occupational therapy. This information was used to systematically construct vignettes (Chapter 5) to hypothetically depict discharge to home scenarios which approximated the risk involved in this area of practice.

The factorial survey (Chapter 6) methodology was selected on the basis that the positive risk-taking barriers could be presented together in the vignette, and these could be controlled and manipulated as part of an experimental approach. This was important because in deciding whether to support a home discharge such factors may occur together in real life. Moreover, their single or combined relationship with the decisional outcome was of interest and could be analysed at each experience level, Novice, Semi-expert, and Expert. This ruled out qualitative research approaches or quantitative methods more akin with traditional survey design.

In this chapter, the scoping review, consensus study by NGT and the factorial survey findings will be presented and discussed in relation to their aims and research questions. The findings that are consistent across at least two of the studies or have multiple associations across this body of work will be presented as key findings. The key findings will be evaluated singly and as a group before comparing them to different sources that support or present counterarguments as part of a synthesis to create an original interpretation of their meaning. This will include any unexpected results. A critical overview of each study and combination thereof will be presented in relation to their strengths and limitations, before examining their relevance to other occupational therapy risk related studies. The implications of these key findings will then be examined in relation to occupational therapy practice, education, and future research. In this context, an assessment of the original contribution to knowledge this research programme has provided will be made.

At the end of this chapter a conclusion to this programme of research will highlight and summarise the main points of this chapter and present recommendations.

7.2 Addressing the research aims and questions

In this part of the chapter, the research aims and questions will be discussed in relation to the scoping review, NGT and factorial survey studies to determine whether they have been achieved and answered.

In Phase 1 of this research programme, it was important to identify the volume and scope of the literature pertaining to the common areas of risk and their characteristics from an occupational therapy intermediate care perspective, as reflected in the scoping review aims. The scoping review was conducted using a systematic approach. Ten risk domains and three prominent risk characteristics were found in this review. The most prominent risk domain was 'Falls' followed by 'Discharge'. By comparison the risk domains of 'Practice errors', 'ADL's', 'Pressure care', 'Frailty management', 'Patient handling', 'Loneliness', 'Nutritional Care' and 'Language barriers' were less common and in the majority of cases were supported by only one article within the review. The risk characteristics of 'Risk Awareness and identifying risk', 'Decision making under risk' and 'Improving safety' were prominent themes generated from the analysis of the studies reviewed. Elucidating these common areas of risk and their characteristics from an occupational therapy perspective has addressed these aims and answered the research question.

To address whether the common areas of risk found in the scoping review were also reflective of the perspectives of intermediate care occupational therapists in practice and to identify and determine the prevalence of positive risk-taking barriers, a consensus study by NGT was employed in Phase 2 of this research programme. Research aims and questions were constructed reflecting these areas of investigation and in the context of the four intermediate care service models (home-based, reablement, bed-based, crisis response).

The findings reflected a heterogeneous mixture of common areas of risk and positive risk-taking barriers. The participants ranked nineteen areas of risk agreeing that 'Falls' and 'Comorbidities' were very common risks. The remaining seventeen identified areas of risk were arranged in order of the participant ratings, see Figure 4. These included 'Cognitive impairment/memory' and 'Lack of care support' which were found to be both common and very common occupational therapy intermediate care risks and important to informing the direction of Phase 3 of this research programme.

The NGT participants identified sixteen positive risk-taking barriers, 'Different risk perception for organisations/providers' and 'Shared skills generic working-not understanding the OT role' were rated highest. All the positive risk-taking barriers identified were arranged in order of the participants' ratings. Those that received a high level of agreement in the common and very common categories included these positive risk-taking barriers, 'Lack of support/availability of carers', 'Lack of patient understanding/agreeing with recommendations' and the 'Blame culture and accountability cause risk averse behaviour'. Elucidating these common areas of risk and positive risk-taking barriers in the NGT study answered the research questions and informed vignette construction (Chapter 5) and the factorial survey (Chapter 6).

In Phase 3 of the research programme, the main aims were to investigate the effect strength of the' Limited capacity', 'No Support', 'Risk Averse Family' and 'Blame Culture' positive risk-taking barriers on Novice, Semi-expert and Expert occupational therapists in relation to whether they would recommend a home discharge for an older

adult. Identifying which of these groups were more or less likely to recommend a home discharge by comparison was also an important aim for this study.

The findings identified the combined positive risk-taking barriers had a statistically significant effect on each group's propensity to recommend a home discharge. In the context of the statistical significance of each positive risk-taking barrier, 'Limited Capacity' and 'No Support' factors were found to have such an effect in all groups. Likewise, statistical significance for the Blame Culture factor was observed but in the context of the Semi expert-group only. Additionally, the propensity to recommend a home discharge increased with experience, Novices being least likely and the Expert group being the most likely to recommend a home discharge in relation to these positive risk-taking barriers. In this context the research aims were met.

7.3 Summary of the key findings

The key findings were identified from the scoping review, the consensus study by NGT and the factorial survey results. They have been identified from the findings relating to the common areas of risk and prevalent positive risk-taking barriers and those barriers which had the most effect strength on the likelihood to recommend a home discharge. In all cases these were compared with the scoping review findings pertaining to the three risk characteristics identified to provide context and to evidence why they are key findings.

The key findings that relate to the common areas of risk are ‘Falls’ and ‘Discharge’. In this research programme, ‘Falls’ was identified to be the most common area of risk in occupational therapy intermediate care. The concept of risk is different from factors that inhibit risk related decision making, in this respect ‘Falls’ could not be considered a positive risk-taking barrier and was not identified as such in the consensus study by NGT. This distinction is important. Falls is a key finding and provided an important aspect of the vignettes to give a sense of risk. Likewise, it is important that ‘Discharge’ as an area of practice was identified as a prevalent risk and not a positive risk-taking barrier, however, it was the only practice setting identified bringing essential context to the vignettes. It brought all the components in the vignettes together whilst presenting an area of risk relevant to making decisions and recommendations that relate to positive risk-taking. For these reasons it was the most appropriate outcome measure for the factorial survey.

In relation to the factorial survey, the four positive risk-taking barriers, ‘Limited Capacity’, ‘No Support’, ‘Blame Culture’ and ‘Risk Averse Family’ are key findings, albeit the Risk Averse Family factor was only statistically significant when combined with the other barriers in the model tested. As such, these positive risk-taking barriers were found to be statistically significant either as single factors or in combination in the context of whether to recommend a home discharge. As discussed in the previous chapter, each experience level, Novice, Semi-expert and Experts was found to have unique findings. The Novices were least likely to recommend a discharge by comparison, the ‘Blame Culture’ factor was only found to be statistically significant in the Semi-expert group and the Expert group considered the ‘Limited Capacity’ factor

most relevant, as indicated by this factor having the most effect strength on their decisions overall.

These key findings will now be discussed individually and brought into context with each other and discussed in relation to the scoping review risk characteristics.

7.3.1 Falls

The risk domain of ‘Falls’ was identified as the most prevalent area of risk in both the scoping review and NGT study. This was unsurprising considering it is one of the main causes of disability and mortality in older adults (National Institute for Health and Care Excellence, 2015).

The key themes of risk identification, prediction, mitigation, holistic assessment, barriers to decision making and prevention including improvement recommendations was identified in the scoping review’s falls risk domain characteristics.

Identifying the most high-risk factors in falls is important in an occupational therapy assessment. Ruchinskas (2003) suggests, that occupational therapists should have an empirical awareness of the fall risk factors that present the highest amounts of risk. In relation to understanding these in the context of disease pathology, knowledge of condition specific (i.e., stroke) falls risk factors is important to be able to adapt prevention programmes (Buri et al., 2000; Pighills et al., 2019). In addition to the

identification and awareness of risk factors, predicting them in the context of older adult care is challenging. Ruchinskas (2003) asserts fall risk prevention includes identifying who may fall with some predictive accuracy and that predicting falls in the over 60 age group is difficult. Moreover, employing falls prevention strategies is fraught with difficult decision making. Pighills et al. (2019) found that decisions relating to preventing falls were affected by confidence in and awareness of guidance, misunderstanding the value of occupational therapy, levels of key stakeholder support, financial and time implications to complete environmental modifications and administration.

Reducing the occurrence of falls compared to reducing the harm from falling are important distinctions. In the context of preventing further harm after a fall, Kinn & Galloway (2000) contend teaching a client how to rise after a fall was a key prevention strategy to avert any additional harm in the over 65's. Providing a holistic assessment of the client is helpful in this context. Hasegawa & Kamimura (2018) and Xu et al. (2019) adapted falls assessments and prevention programmes in relation to the client group, culture, and their specific environmental demands to support decision making. Furthermore, falls prevention programmes were identified to be cost effective in the context of increasing healthcare costs. However, the need for further research to support their reliability and validity was identified. Additionally, better access to peer support and collaboration with key stakeholders, staff education to recognise empirically supported fall risk factors and teaching a client how to rise after a fall were important to improving fall prevention strategies (Kinn & Galloway, 2000; Hasegawa & Kamimura, 2018; Pighills et al., 2019; Xu et al., 2019).

In summary, the risk domain of ‘Falls’ has been found to be the most common risk. Additionally, its prominence within the scoping review’s risk characteristics is evident, confirming its relevance to occupational therapy and positive risk-taking in an intermediate care context.

7.3.2 Discharge

In the scoping review, determining the common areas of risk (risk domains) was established in relation to the amount of supporting literature identified in each domain. In this context the risk domain of ‘Discharge’ was found to be the second most common area of risk. It also shared many themes across the other studies in this research programme. In the scoping reviews risk characteristics, the common themes were predicting discharge outcomes, balancing the concerns of carers and family, promoting autonomy with clients who were cognitively impaired, support availability and decisional barriers in discharge planning.

In the context of a requirement for intermediate care and after a period in hospital, it is important to assess a client’s functional capacity in their home environment in relation to the occupations they need and want to do (Moats, 2006) and in relation to the level of support availed to them. Making such decisions involves reasoning a multitude of factors and variables some of which detract from providing a safe and effective transition (Moats & Doble, 2006; Moats, 2007). In this context, an occupational therapist must assess the person, occupation, and environment to ascertain whether such a transition is conducive with a client’s safety and wellbeing. This process requires the

therapist to be confident in their predictive accuracy that the discharge will not result in a failed transition where the patient is harmed and readmitted to hospital. Simning et al. (2019) investigated rehabilitations providers' predictions of the likely success of a transition between a skilled nursing facility to home. Their findings suggest a better understanding of the factors informing post discharge predictions for occupational therapists may improve patient transitions. Living alone, more medical conditions, worsening physical function and depression were associated with a failed transition to home. However, their study identified that occupational therapists and physiotherapists may hold unique insights into such transitions as their predictions were more associated to true outcomes in comparison to other health and social care workers.

A client's family may provide support and act as proxy decision makers and their views and judgement are important as part of client centred care. Moats & Doble (2006) and Moats (2007) suggest that occupational therapists aim to strike a balance between a client's autonomy and safety, however, these types of decisions are subject to professional objectives, support and resource availability and the concerns of the family or carers. Moreover, these types of decisions can be difficult when the family or carers are unwilling to accept the risks involved (Moats, 2007). Moats & Doble (2006) found that client centeredness is often abandoned when clients put themselves in danger. Nygård et al. (2004) found that occupational therapists viewed inadequacies in a client's motor, cognitive and functional capacity as problematic during home discharge planning. In the context of improving discharge risk assessment, Davis Aisling and McClure, (2019) called for standardised checklists for hazard identification.

In this research programmes key findings ‘Discharge’ has been contextualised. Planning and conducting a home assessment to ensure the discharge location is optimal in relation to a client’s functional capacity is important. In relation to discharging people from hospital, the scoping review risk characteristics evidence that a client’s cognitive capacity, their autonomy and safety, the level of family or carer support and their propensity to embrace risk are important factors. As such this affirms ‘Discharge’ as a risk prone area of practice and that it is significantly associated to the other studies key findings, those being, ‘Limited Capacity’, ‘No Support’ and ‘Risk Averse Family’ factors as identified in the NGT study and employed as independent variables in the factorial survey. Additionally, these IV’s have been found to have a strong relationship with the dependent variable (recommendation to discharge) which also supports ‘Discharge’ as a key finding in this research programme.

7.3.3 Limited capacity

In the consensus study by NGT findings, the common area of risk, ‘Cognitive impairment/memory’ was ranked by all participants as either common or very common. ‘Lack of understanding’ was explained in the context of cognitive capacity, the positive risk-taking barrier, ‘Lack of patient understanding/not agreeing with recommendations’ also affirms that ‘Limited Capacity’ has key importance. In this context it was ranked by the majority as being common and very common. The factorial survey also confirmed that ‘Limited Capacity’ was statistically significant as an independent variable across all groups (Novice, Semi-expert, Expert) and as part of a combined model in relation to the decisional outcome (dependent variable), that being, whether to

recommend a home discharge. Emphasising its relevance, the Expert group were most effected by the ‘Limited Capacity’ factor, albeit this did not cause this group not to recommend a hospital to home discharge. Having limited capacity to understand positive risk-taking will now be discussed in relation to the scoping review’s risk characteristics regarding the challenges associated with clients who are cognitively impaired.

A client found to have limited capacity was relevant in the ‘Falls’ risk domain. In the context of older adult fall prevention, spatial disorientation was found to be a significant falls risk factor in those with a cognitive impairment (Buri et al., 2000). In the ‘Discharge’ risk domain, a client’s cognitive capacity was identified as a determinate in planning a safe discharge (Nygård et al., 2004). In the ‘Patient handling’ risk domain, knowing a patient’s cognitive abilities and characteristics was important and best practice for equipment selection. Moreover, looking for signs of cognitive impairment was important for frailty assessment (Roland et al., 2011).

In summary, as a factor in risk related decision making, ‘Limited Capacity’, was relevant in many of the scoping review risk domains. In relation to the consensus study by NGT it was found to be both a common area of risk and a positive risk-taking barrier. This informed the factorial survey and its results confirmed that a clients ‘Limited Capacity’ to understand occupational therapy does affect how likely Novice, Semi-expert and Experts will recommend a home discharge. This supports ‘Limited Capacity’ as a key finding in this programme of research.

7.3.4 No Support

In collaboration with a client and with their permission, intermediate care occupational therapists work with a client's family, friends, carers, and other healthcare workers as part of a network of support, especially, at the point of discharge. Deficiencies in such support can pose risk which may be difficult to mitigate to a point where safe and considered positive risk-taking can be employed. The consensus study by NGT found 'Lack of care support' a common area of risk, receiving a high level of agreement in the common and very common categories. As a positive risk-taking barrier, 'Lack of support/availability of carers' also received a similar level of agreement. In the factorial survey 'No Support' was found to be statistically significant as a single factor in all groups and in combination with the three other positive risk-taking barriers in relation to a decision whether to recommend a home discharge. No support (or a lack of support) was not a significant theme in the scoping reviews risk characteristics. However, Pighills et al. (2019) posits that key stakeholder support is important to an occupational therapist led environmental assessment and modification to prevent falls. A client's level of support was also important in deciding an appropriate balance between autonomy and safety in the context of discharge planning (Moats, 2007; Moats & Doble, 2006).

The level and type of support a client can access when they present as a falls risk and or at the point of discharge into intermediate care is an important consideration when employing positive risk-taking. Whilst the scoping review provided limited information

in corroboration, the prominence of ‘No Support’ in the consensus study by NGT and the factorial survey findings, affirms it as a key finding in this research programme.

7.3.5 Risk Averse Family

Positive risk-taking requires occupational therapy practitioners to embrace risk, that is, accepting that risk is an inevitable part of their provision and that it must be considered in a therapeutic context so that a client can engage in activity safely. Post occupational therapy provision, risk taking responsibilities fall upon the client, their carers and family that are involved in their care provision. This provides that those involved in a client’s care must be agreeable to embrace the risks identified and agree with positive risk-taking strategies as part of the continuum of care.

In the consensus study by NGT, the participants agreed that ‘Risk averse carers not willing to take risks’ was a common positive risk-taking barrier. The ‘Risk Averse Family’ factor was not found to be statistically significant on the Novice, Semi-expert and Experts groups propensity to recommend a home discharge. Conversely, its contribution as a factor in combination with the other factors (Limited Capacity, Blame Culture, No Support) reduced the likelihood to support a home discharge with statistical significance in each group of participants.

In the scoping review’s risk characteristics, a family or carers propensity not to support positive risk-taking owing to them being intolerant to or not accepting the risk involved

was not explicitly reported. In the context of supported decision-making during discharge, Moats (2007) found that an occupational therapists' capacity to be client centred was affected when a family was not willing to accept risk.

The 'Risk Averse Family' factor, out of all the positive risk-taking barriers, had the least impact on the participants in the factorial survey although there was some evidence it does have a negative influence on such decisions. It is important to remember that the broader literature review (Chapter 1) and the scoping review (Chapter 2) found no literature that explicitly focused on positive risk-taking and how risk averse behaviour from anyone in a clients' network of care can counteract such a strategy. Despite this there was still evidence found in the scoping review 'risk characteristics' that client centred care involves accepting risk by all those that provide care.

The consensus study by NGT found the concept of being 'risk averse' a major theme and related it to both therapists and caregivers. In this context, risk averse thinking is likely to effect decision making and impede positive risk-taking in the real world. Becoming risk averse or avoiding risk altogether is natural when feeling fear, whether such fear is through taking the risk personally or through the fear of repercussions from recommending or supporting someone to take risk. Allowing such behaviours to influence practice can impact a client's autonomy and their right to self-govern and take the risk they choose safely.

The 'Risk Averse Family' factors prominence in the NGT and lack thereof in the scoping review and factorial survey may indicate it impacts more on the wider

implementation of discharge and the decisions pertaining to a safe transition (Lockwood et al., 2020) rather than on a decision to discharge. As such, this key finding was also an unexpected result, and this will be discussed later in the chapter and before discussing the concept of being risk averse in relation to ethical practice.

7.3.6 Blame culture

Organisational culture has an influence on its workforce. In this context, a culture has the capacity to be harmful and its systemic nature can affect risk management where accountability is more akin to culpability, and this can impact how its workforce perceive risk in a positive risk-taking context. One specific area which was identified as being a positive risk-taking barrier was ‘Blame culture’.

Blame culture was not identified in this research programmes scoping review. In the consensus study by NGT findings, ‘Blame culture and accountability cause risk averse behaviour’ received a high level of agreement directly linking this positive risk-taking barrier to risk averse practice. In the factorial survey, the factor ‘Blame culture’ was found to be statistically significant in the Semi-expert group only, however, in combination with the other factors (Limited Capacity, Risk Averse family, No Support) it reduced the likelihood to support a home discharge. This affirmed that the ‘Blame Culture’ factor does have both a single and combined affect and, in some cases, these were statistically significant. This supports that ‘Blame Culture’ is a key finding in this research programme.

7.4 Unexpected results

The unexpected results in this research programme will be discussed in relation to the factorial survey, specifically the results pertaining to the 'Risk Averse Family' positive risk-taking barrier (in all groups) and the 'Blame Culture' positive risk-taking barrier in the Semi-expert's results. These were, in part, not foreseen and surprising in comparison to the other groups and in relation to the inferences that can be drawn from them.

The 'Risk Averse Family' positive risk-taking barrier was not found to be statistically significant at any experience level (Novice, Semi-expert, Expert). This result contradicts the findings of the consensus study by NGT, in that it was ranked by the majority as a common positive risk-taking barrier. Some occupational therapy clients cannot make decisions for themselves or require support to make decisions in relation to their care. In this context, family caregivers can act as proxy decision makers, and in relation to discharge planning, caregivers can fail to respect risk taking choices being risk avoidant, thereby, undermining this process (Moats & Doble, 2006). Moreover, Moats (2007) found, client centeredness became difficult when a client's family were not accepting of the risk involved in care provision. In the context of risk taking in dementia care, (Clarke et al., 2009) found agreeing what constitutes as an acceptable level of risk was problematic between managers, staff and family.

Positive risk-taking requires a negotiated approach amongst those involved in a client's care, and different risk perceptions can aggravate this process and when agreement is not reached this can prevent positive risk-taking. In the factorial survey, the 'Risk

Averse Family' positive risk-taking barrier was likely to have more impact on whether to support a home discharge in a scenario where the client had a severe and very limiting cognitive capacity. Such a scenario would have placed more emphasis on family risk related decisions in relation to the client's care. This may have given this factor more relevance and increased its propensity to affect the decision to recommend a home discharge across all groups.

There are known differences in judgements and decision-making capacities between Semi-experts in comparison to Novice and Experts (Harteis et al., 2012; Hubscher-Davidson, 2013; Murray et al., 2011, 2013). Conversely, there were many similarities between the Semi-expert groups results in comparison to the other groups, notably, the 'No Support' and 'Limited Capacity' positive risk-taking barriers were found to be statistically significant in all groups. There was an expectation that the positive risk-taking barriers would affect all levels of experience at different levels of intensity but not solely in one group and not the others. In this context, the 'Blame Culture' positive risk-taking barrier had a statistically significant effect on whether to recommend a home discharge in the Semi-expert group only. This part of the chapter will discuss why such a result occurred from a theoretical perspective before offering a rationale for its likelihood in occupational therapy provision.

The difference in the effect strength of the 'Blame Culture' positive risk-taking barrier in the Semi-expert group may be explained by the known differences in their cognitive processing in comparison to other experience levels. Acquiring experience in a task domain, the cognitive processes used in decision making and reasoning develop from

being deliberate and logical in manner to intuitive (Dreyfus and Dreyfus, 1986). Dreyfus (2004) posits expertise is gained through skill acquisition and this process includes an intermediary stage which incorporates advance beginner before progressing to preliminary levels of proficiency prior to gaining expertise. These intermediary stages, therefore, are distinct from novices and expert levels of experience. In this context, the ability to make more subtle and refined discriminations is what distinguishes the expert from those at an intermediary stage who have gained a level of proficiency (Dreyfus, 2004). Witteman and Van den Bercken (2007) investigated 41 expert, intermediate and novice psycho-diagnosticians who were asked to write down their diagnostic classification and were assessed on both time and accuracy. They found the intermediate group (semi-experts) were distinct from the experts and novices, performing both faster and poorer in the task context.

In relation to the 'Blame culture' positive risk-taking barriers effect strength on the Semi-expert group, their reaction may indicate they have yet to build up all the necessary skills to mitigate its effect by making subtle, refined and well evidenced clinical decisions more akin with experts. Moreover, its affect may be less in experts who have acquired skills that promote clinical accuracy, confidence and resilience in risk related decision making in relation to accountability and blame. These aspects in occupational therapy provision have to be experienced and this explains why the Novice group was not as affected by comparison.

Occupational therapy students and those in a preceptorship phase of their career (Novices) may have had limited exposure and working experience of a blame culture or

be protected from such conditions by expert supervision and / or mentorship. Consequently, the Semi-expert group may feel more susceptible for being blamed for errors between this interface and as they transition to acquire higher levels of expertise. In summary, this may explain why such feelings are not apparent in Novice, felt most in Semi-experts and dissipate when expertise is acquired. Additionally, the factorial survey affirms that experience in relation to studying risk perception is not binary between lay persons/novices and experts and the there is an intermediary stage in which Semi-experts are likely to perceive and act upon risk differently.

7.5 Synthesis of the key findings

In this chapter, this research programme's questions and aims have been addressed and the rationale for the key findings have been discussed. To synthesise these key findings, they will be examined in the context of discharge and in relation to the wider connotations within occupational therapy. Their relationships with each other will be examined and the 'Risk Averse Family' positive risk-taking barrier will be discussed in the context of ethical practice and dilemmas therein. This will add further context and insight to the key findings to support the interpretation of their meaning.

In this research programme, discharge has been identified as a common risk domain. This association is conditional, in that the safety of a patient being discharged is subject to the amount and type of risk factors (if any) that are relevant to them and have been identified. In a wider context, the majority of hospital discharges are effective and safe with intermediate care successfully supporting many older adults transitioning from

hospital to home (NAIC, 2017). A well-planned and timely discharge can prevent patient harm. The National Audit Office (NAO) assert that delayed discharges can have a negative effect on older adults as they quickly lose mobility and the ability to do everyday tasks. Moreover, unnecessary prolonged hospital stays bring additional pressure on the financial sustainability of the NHS and local government (NAO, 2016).

As discussed in the previous chapters, discharge was the only area of practice that was identified in this research programme which characterises part of the intermediate care remit, that being shifting care provision away from hospitals in favour of promoting independent living. Occupational therapists are frequently involved to ensure transitions to home are timely, appropriate, and safe. In this study discharge is the overarching area of practice where occupational therapists are likely to encounter 'Falls', 'Limited Capacity', 'No Support', Blame Culture' and 'Risk Averse Family' factors. This makes the practice area of discharge central to synthesising these key findings.

Discharge location planning has evolved to put the patient first and not decompartmentalise them into a pathway of care that does not consider their home as the priority or first option for discharge. The Discharge to assess pathway (D2A) helps patients who are clinically optimised and do not require an acute care bed and can return home with further support and care (NAIC, 2017). Moreover, hospital to home models such as step down, virtual ward and covid virtual wards are conducive with facilitating patients to get the care they need at home safely (NHS, 2022a;b). As such, these objectives are akin with intermediate care ideology. An integral part of this ideology is to risk manage hospital to home transitions in order to keep intermediate care service

users safe in relation to the combination of risk factors triggered in this context. As such, discharge provided a logical and appropriate area of practice for the vignettes and as a decisional outcome in the factorial survey where the effect strength of the positive risk-taking barriers could be assessed, albeit, presented implicitly within the vignettes.

In this part of the chapter, the association between the key findings will be explored and discussed. The concept of falls will be examined in relation to its risk factors and how occupational therapy can address falls prevention within its provision. Additionally, further evidence will be provided supporting 'Falls' as the most prevalent risk in this programme of research and arguably the most harmful risk to older adults accessing occupational therapy intermediate care. Furthermore, 'Falls' will be discussed in relation to the other positive risk-taking barriers in the research programme. Linking the key findings will provide clarity and help explain why these findings are relevant to intermediate care and to community based older adult occupational therapy provision.

Falls was found to be the most prevalent area of risk in this research programme, and it is very relevant in the context of discharge to home occupational therapy assessments. Being that it presents such a high level of risk with many risk factors to consider, it is likely to invoke risk averse behaviours, especially, when a client has a cognitive impairment and where their support does not meet their needs. For this reason, it is a key risk to mitigate at the point of discharge. Occupational therapy pre-discharge home visits are an important part of practice, employed internationally to assist hospital discharge planning (McIntyre & Atwal, 2005; Atwal et al., 2012). In their study of the experiences of occupational therapists and multidisciplinary stakeholders relating to

pre-discharge home assessments, Godfrey et al. (2019) found conducting a pre-discharge home visit was beneficial to reducing the risk of falls. Johnston et al. (2010) assert, pre-discharge occupational therapy home assessments are common practice and considered important for falls prevention in older people.

In the context of an older adult discharge, a falls risk, relates to a potential undesirable and dangerous patient outcome. It is a risk factor for mortality and disability whilst also comprising of a multitude of modifiable and to a lesser extent non-modifiable risk factors. Falls are the most common cause of injury related deaths in people over the age of 75 with over 5,000 older people dying as a result of a fall in 2017, a 70% increase on the numbers in 2010 (AgeUK, 2022). In England in 2013, falls were the ninth highest cause of disability-adjusted life years and the leading cause of injury (GOV.UK, 2022).

Intermediate care is mostly accessed by older adults with complex needs. Age is one of the key risk factors for falls. Aging is a non-modifiable risk factor, and the natural ageing process means that older people have an increased risk of having a fall. Many modifiable risk factors relate to physical, sensory, and cognitive changes associated with ageing, in combination with environments that are not adapted for an ageing population. There are over 400 known risk factors for falling (GOV.UK, 2022; NICE, 2011; RCOT, 2020). From an occupational therapy perspective falls risk factors can be catagorised into intrinsic (person), extrinsic (environmental) and behavioural (occupation) considerations (RCOT, 2020).

The models of conceptual practice as previously discussed (Chapter 1), those being, CMOP-E, PEOP, MOHO and the Kawa (river) model provide a framework of considerations for occupational therapists to utilise their expertise to identify the complex interaction of these multifaceted falls risk factors. Moreover, these models can be used together, and support decision making by identifying how they interact with the individual, their environment and their occupations (RCOT, 2020). Additionally, there are key groups of individuals who may be at higher risk, these include those who live with a cognitive impairment. In older adults cognitive impairments are highly associated to dementia and or delirium (RCOT, 2020).

Limited or fluctuating capacity is a falls risk factor and a common aspect of assessing older adults who are referred into intermediate care at the point of discharge. A key finding in this research programme was 'Limited Capacity', which was identified to be a common area of risk and a positive risk-taking barrier. Importantly, its prominence in the factorial survey was highlighted as it was identified to have the most effect strength on the Expert group in comparison to 'No Support' which was found to have the most effect strength on Novices and Semi-experts. In this context, 'Limited Capacity' has particular significance, being that, out of the positive risk-taking barriers it had the most effect in reducing the likelihood to recommend a discharge in the Expert group. In this part of this chapter the discussion will provide rationale for this finding.

Montero-Odasso & Speechley (2018) contend falls remain common in older people, with higher prevalence and morbidity in those who are cognitively impaired. The consequences of falls in this group are serious and those with cognitive problems are

known to fall with greater frequency. Allan et al. (2009) posit there is a higher rate of falls amongst older adults with dementia living in the community with 50–80% of them falling within 12 months, compared to one in three older adults with no dementia. Moreover, Liu-Ambrose et al. (2008) found older adults who live with dementia may experience difficulties with memory, planning and attending to a task impacting their ability to adopt falls prevention strategies. People with dementia are at higher risk of sustaining a fracture than cognitively well people (Alzheimer's Society, 2016) and those with dementia are at three times greater risk of sustaining a fractured neck of femur (Clarke et al., 2009; RCOT, 2016) . Sustaining a hip fracture is likely to impact the scope for rehabilitation. Smith et al. (2020) found limited evidence for effective rehabilitation and care models for people with dementia after a hip fracture related to a fall.

The implications of falling can be catastrophic in older adults. The occurrence of falling and its impact have been discussed to be more prominent in older adults who have a cognitive impairment. At the point of discharge such considerations are likely to be amplified as hospital patients transition into less dependent care or minimal care arrangements. As such, this offers explanation to why the 'Limited Capacity' positive risk-taking barrier had the most impact in the Expert group, followed by the 'No Support' positive risk-taking barrier. The Expert group was most likely to recommend a home discharge. Therefore, the positive risk-taking barriers or combination thereof had less of an effect and did not result in this group not recommending a discharge overall. A possible explanation for this is the Expert group were confident in their ability to mitigate any risks or barriers in this context.

Family caregivers are important to discharge planning, especially in relation to their availability and the skills they possess to provide care. The 'No Support' positive risk-taking barrier was observed to effect all groups in the factorial survey. In this context, the importance of family caregiver support will be discussed. Moats (2007) found occupational therapists in their discharge planning view family as part of their client centred practice. Their perspectives included that a client's family are involved in caregiving and that they are sometimes needed as proxy decision makers, especially, where a client has a cognitive impairment. Shepperd et al. (2013) posits that a larger responsibility for care provision has been placed on informal carers which has led to a significant increase in post discharge care being provided by family caregivers.

Bauer et al. (2009) states that understanding aspects of discharge planning that increase family satisfaction with the process is essential if discharge is to assist with better patient outcomes. Grimmer et al. (2004) states that family caregivers are believed to increase the patient's recovery from acute illness and decrease the likelihood of readmission. Bauer et al. (2009) found that working with family caregivers and input from the multidisciplinary care team, has positive outcomes for older adults of high risk of readmission.

Occupational therapists' skills in assessing functional ability, alleviating the fear of falling and assessing the hazards in a client's home environment are essential to ensuring safe discharge transitions and to preventing falls. These types of assessments must be negotiated and include the perspectives of the caregiver and or family (RCOT, 2020). Falls and the fear of falls can seriously reduce quality of life. Vieira et al. (2016)

found 60% of family caregivers are afraid that their older relative will fall again. The fear of risk taking promotes risk avoidance (Slovic, 1987; Slovic & Peters, 2006). Moats & Doble (2006) found that risk avoidance can contribute to loss in self-worth, identity integrity and control.

In the factorial survey, the 'Risk Averse Family' positive risk-taking barrier referred to a family caregiver being either risk accepting or risk avoidant. In the context of discharge decision making, Moats & Doble (2006) suggest there is a requirement for risk avoidance and autonomy to be balanced. This aligns to weighing up the benefits and harms that may occur as a result of positive risk-taking (Morgan, 2004). In this context, the ethical principles of non-maleficence, promoting beneficence and autonomy must be considered. Attempting to balance of views of risk can be problematic when such considerations present equal weights in the argument. Lewens (2007) suggest that the real dilemmas of risk occur when two options are roughly equal in their overall attractiveness, balancing possible benefits against possible losses, but where one, the riskier one, offers greater possible benefits at the price of greater possible losses. These types of dilemmas occur when risks are negotiated amongst those with a duty of care and are often compounded by different ideologies and roles in care provision. Autonomy promotion is acknowledging the risks that a client is prepared to take, and from a contrarian perspective, strategic risk avoidance can maximise a client's autonomy in the future. Moreover, clients should participate in these decisions congruent with their cognitive capacity to do so (Moats & Doble, 2006; Moats, 2007).

Decision making at the point of discharge can be complex and dynamic, especially where there are ethical dilemmas with very equal benefits and harms. With ‘Falls’ in older adults potentially presenting such catastrophic outcomes to life and quality of life and more prevalent with those with a cognitive impairment, it is unsurprising why these are prominent findings in this research programme. It is also understandable why the appropriate level of support must be provided at the point of discharge and why ‘No Support’ was a prominent positive risk-taking barrier at all experience levels.

Whilst ‘Risk Averse Family’ was found to be prominent in the NGT and not in the factorial survey is likely to be how it was presented in the vignette and presenting the family as proxy decision makers with a client who required such support through having severe limited capacity may have triggered stronger reactions to this factor. As a factor it may also be relevant to developing interventions in collaboration with the family and not so much in deciding upon a discharge location.

In relation to the level of risk constructed in the vignettes, this invoked the Semi-experts to reduce their propensity to discharge when the ‘Blame Culture’ risk factor was presented, and this finding was statistically significant. However, the ‘Blame Culture’ factor was not statistically significant in the Novice or Expert group, which means this factor did not have a notable effect on these groups propensities to recommend a discharge. This indicates that working in a culture of blame effects those who are qualified and are already practicing occupational therapy but are yet to develop the resilience, professional reasoning skills and confidence that comes with expertise.

Occupational therapists and healthcare workers are not impervious to risk avoidant feelings. Such feelings may result in different behaviours. In relation to ethical dilemmas occurring in discharge planning, Moats & Doble (2006) found persuasive and coercive methods were used to influence the client. Moreover, the management of risk has been found to cause uncertainty and anxiety among professionals and being risk averse may be because risk is closely linked to accountability and blame (Bowling & Ebrahim, 2001). Khatri et al. (2009) states a trusting and learning culture is yet to be established in healthcare and a culture of blame resides in organisations characterised by an unwillingness to take risks or accept responsibility for mistakes because of a fear of criticism or management admonishment. Okpala (2020) found blame culture negatively affects the nurses' willingness to report errors leading to increased nurse turnover. In the context of caring for those with dementia Morgan & Andrews (2016 p.127) assert, the challenges that practitioners face are represented by a need to clarify the risks in a given situation from diverse perspectives. In relation to the key findings these perspectives include those occupational therapists who are developing expertise and this group (Semi-experts) were most affected by the 'Blame Culture' factor.

In summary, the key findings are congruent with the literature discussed and in the context of the factorial survey the interrelatedness of the risk domains of discharge, falls and the positive risk-taking barriers have produced results which are reflective of how risk can affect decision making at different experience levels. The effect of the 'Limited Capacity', 'No Support', 'Blame Culture' and 'Risk Averse Family' factors impacted Novice, Semi-experts and Experts differently, and all reduced the likelihood to recommend a discharge, although no one group did not recommend. The Novice group was neutral, and the Semi-expert and Expert groups would recommend overall, the

results support that the Novice were least likely to recommend a home discharge and were risk averse by comparison. Moreover, the Semi-expert group was the group most effected by the ‘Blame culture’ factor and this was found to be statistically significant and the ‘Limited Capacity' factor was the most relevant to the Expert group as indicated by it having the most effect strength and being statistically significant in this context.

It is understandable why a lack of experience is associated to risk avoidance and in this context why positive risk-taking barriers do not have a universal effect. Such reactions to positive risk-taking are likely to be more prominent the point of discharge for occupational therapists. Discharge is a risk prone area of practice which is accessed by older adults, some of which will be at a higher risk of falls, especially if they are cognitively impaired. This places emphasis on having the correct support in place, embracing risk, reaching an agreement between those with a duty of care, well considered ethical reasoning and not succumbing to blame if things go wrong. If risk avoidance becomes the dominant principle or agreement cannot be reached between all those involved in the care network, positive risk-taking is undermined.

7.6 Strengths and limitations of the research

The main strengths of this research were:

1. This research programme was challenging from the outset as there was very limited literature relating to the empirical study of risk perceptions at different levels of occupational therapy experience. In this respect it was difficult to decide on a methodological direction, considering the

complexity of researching risk perception. From this perspective it was important to fully understand these imperatives. A broad review of the literature in Chapter 1 gave the researcher (student) essential knowledge in occupational therapy, intermediate care and risk. This supported the study design and informed the research studies throughout. Additionally, conducting a broad review of literature helped in determining the need for a scoping review.

2. Considering older adult vulnerability, age related risks and their variability to rehabilitation in the context of occupational therapy intermediate care it was important to understand the common areas of risk and the risk characteristics in the research already conducted in this area of practice. The scoping review was conducted systematically and rigorously, highlighting ten risk domains and three prominent risk characteristics which identified the nature and scope of the literature and the major themes therein. This was a very important aspect of this programme of research to lay the foundation in which to build its investigation. The findings provided were novel and addressed a gap in knowledge, particularly, in respect that no empirical studies were identified that explicitly focused on risk management and or positive risk-taking and this includes any barriers to either of these imperatives. Disseminating the scoping review findings by publicising and through the researchers (student) own seminars and lectures has been a strength of this part of the research programme.
3. Focusing the investigation on the common areas of risk and positive risk-taking barriers from a clinical perspective in the consensus study by NGT

was a logical step to triangulate the scoping review findings and provided further direction for this programme of research. From the researchers (student) perspective, it appears to be the first study of its kind which has identified common risks and positive risk-taking barriers in the context of occupational therapy intermediate care and used the findings to construct vignettes. This process ensured the vignettes approximated true to life risks and by employing the participants who were experienced intermediate care occupational therapists to evaluate them added to their validity.

4. The final study in this research programme was part of a multimethod approach. The vignette based factorial survey was a well-reasoned and appropriate final study in this research programme in relation to investigating the effect strength of the positive risk-taking barriers on a home discharge recommendation at Novice, Semi-expert, and Expert levels of experience. It was designed meticulously using a systematic and rigorous process. It is an original and innovative method to investigating occupational therapy decision making pertaining to positive risk-taking and potentially the first of its kind in occupational therapy risk related research.
5. This research programme has established a robust approach to studying risk related decision making in occupational therapy intermediate care. It has been data driven and used a pragmatic and flexible approach using multi methods which have complemented each other. This approach could be used in relation to other areas of occupational therapy practice to investigate risk perceptions and decision making. In this context, this

research programmes findings are compelling and provide many interesting areas for further research.

The main limitations of this research were:

1. In the scoping review, a broad and inclusive eligibility criterion was adopted owing to the many different perspectives and definitions of intermediate care. This broad focus meant that not all the studies under review were fully representative of intermediate care. Many studies relating to discharge were screened out as they did not meet the scoping reviews definition of intermediate care, these may have added value to the study. Also, there were studies that included disciplines as well as occupational therapy, and this must be considered when interpreting the findings of the scoping review.
2. The consensus study by NGT limitations relate to its sample size, study design including the time restriction for each research question in relation to its effect on gathering qualitative data. The sample size of this study was less than intended, that being, ten were sought but only five experienced occupational therapists participated. Recruitment was during the Covid-19 pandemic, and this was likely to have caused fewer than the anticipated number of participants. Moreover, owing to the Covid-19 pandemic social lockdown the NGT was conducted remotely via video conference which may have stilted natural conversation. The study design focused on two research questions combining two separate NGT activities in one study. The time allotted for each activity may have inhibited discussion during the

'clarification and discussion' stages which may have yielded more qualitative data. Two separate NGT studies answering each research question may have enhanced the study's findings. reduced participant cognitive burden and allowed more time for discussion.

3. The factorial survey limitations relate to the self-assessment of expertise, non-completion, the interpretation of its results including the limitations of the statistical tests conducted. Participants self-categorised their experience level into Novice, Semi-expert and Expert, in some cases, this assessment may have been inaccurate. As such, this has to be taken into consideration when interpreting the results. There were thirty-five participants that did not answer any vignettes resulting in a moderate rate (32%) of non-completion. Testing the normality of residuals and homoscedasticity statistical assumptions was completed by a visual assessment of scatterplots (See Appendix 8). Whilst these assessments were discussed by the researcher (student) and an agreement was reached at supervisory meetings, these assessments are subjective and, therefore, open to different interpretations. In this context, the survey results must take this into account. Additionally, even though the combined effect of the positive risk-taking barriers as a predictive model was not the focus of the study, the proportion of variance in the dependent variable (likelihood to recommend a discharge to home) for the model was low as reflected in the R^2 values reported for each group.
4. This research programme has not provided any in depth qualitative data that explains positive risk-taking and its facilitators and barriers from the perspectives of Novice, Semi-expert and Expert levels of experience. Whilst such data was not required to answer the NGT and factorial survey research

questions, incorporating a qualitative investigation would have brought a richer understanding to this programme's findings.

5. The focus on intermediate care in this research programme make its findings less relevant to other occupational therapy practice settings (i.e., acute care). This must be taken into consideration when interpreting this research programmes findings.

7.7 Relevance to other research studies

The broad literature review in Chapter 1 and the scoping review in Chapter 2 found no occupational therapy research which directly investigates positive risk-taking in the context of older adult intermediate care or community care service provision. Whilst this highlights a gap in knowledge which this programme of research has sought to address, it is challenging to compare this research programme to any related research. However, two empirical studies have been identified in the course of this research programme which have investigated risk in acute care settings using vignette methodology and qualitative and quantitative approaches. In this part of the chapter these studies will be compared to the consensus study by NGT and the factorial survey in this research programme.

Atwal et al. (2012) investigated the risk perceptions of seven occupational therapists and five physiotherapists in the context of older adult acute care discharge. Their qualitative method is in contrast to this research programmes factorial survey and by employing a qualitative approach this study had limitations with regard to identifying

the most impactful risks and the specific risk factors that may have contributed to such findings. One vignette was constructed using seven areas of risk, these were, medical factors (i.e., confusion, multiple pathology), mobility factors (i.e., unsteady on the legs, repeatedly falling), social surroundings, personality attributes, habits, quality of social support and external factors (i.e., lack of resources or complexities of older persons' situation). The participants were interviewed and asked a series of questions relating to their perceptions of risk within the vignette and the interventions they were likely to recommend. This method provided rich qualitative information, and this is a strength by comparison to that of the NGT and factorial survey studies in this research programme. However, such answers may have been subject to social desirability bias (Larson, 2018) if made explicit during the interviews unlike a factorial survey where the factors are embedded and purposefully made implicit.

Atwal et al. (2012) report that incidents of risk were numerous but there was no consensus on what the risks were. As the reported purpose of their study was in part to understand the impact of risk perceptions upon clinical decisions, arguably this was not fully addressed. This is a distinction between this programme of research in that the research questions were carefully constructed not to go outside of what was possible within the methodologies chosen. In attempting to investigate the most impactful factors on risk perception a factorial survey would have been more appropriate. However, Atwal et al. (2012) did identify key areas of risk and report the prominent feelings in relation to these risks as part of a thematic analysis. A key difference between the Atwal et al. (2012) study and the factorial survey in this research programme, is that their factors under investigation could not be disentangled to infer any causality on the participant responses as could have been provided by a factorial survey. This was

particularly apparent in light their study sought to understand decisional outcomes in relation to the factors they had used within their vignette (Atwal et al., 2012).

The findings in the Atwal et al. (2012) study have many similarities with this research programmes NGT study and factorial survey study. Atwal et al. (2012) found cognitive functioning, falls and a perceived lack of support were identified risks. Moreover, one therapist identified that they understood why risk averse behaviour could be a factor when making decisions in acute care. Atwal et al. (2012) concluded that their study highlighted that risk perception does impact discharge decision-making. Their study's findings are mutually confirmable in respect of the key findings as presented in this research programme. Their study included psychotherapists and did not stratify experience levels, and this must be taken into consideration when making such comparisons. However, their findings can be triangulated with this programme of research and together they complement and highlight the relevance of risk as part of professional reasoning and its impact to discharge decision making.

Reich et al. (1998) used four vignettes to portray hypothetical high-risk discharges of older adult dementia patients who expressed a desire to return home. The dementia diagnosis was manipulated (i.e., with dementia or without dementia) within the vignette. The participants used in this study were student and qualified occupational therapists. Reich et al. (1998) hypothesised that inexperienced student therapists would be more reluctant to tolerate certain risks, particularly if the patients had dementia, and more inclined to recommend discharge to institutional care than qualified occupational therapists. Two 11-point interval scales were used for the participants to indicate

whether the believed a discharge to a residential (nursing home) or discharge to home was appropriate or not. The means scores were analysed using an analysis of variance (ANOVA) and regression analysis was used to determine the relationship between the vignettes and the decisional outcomes.

Reich et al. (1998) found that qualified occupational therapists considered discharge to a patient home more appropriate, thereby not overruling a patient's wishes in comparison to student occupational therapists (confirming their research hypothesis). However, the additional diagnosis of dementia in the set of vignettes did not significantly affect decision making for either group. This may point to a lack of experimental method (i.e., randomisation of the sample and or factors) to create a robust orthogonal design, especially in consideration that Reich et al. (1998) vignettes contained many potential extraneous factors. As such this is a notable difference between this study and the factorial survey in this programme of reaserch. However, both this study and the factorial survey have found that student occupational therapists (novices) are less likely to recommend a home discharge in comparison to those with more experience. This highlights that student and occupational therapists in the preceptorship phase of their career are likely to need support when making such decisions, especially, where there is high risk i.e., the increased occurrence of falling in those with a cognitive impairment, as discussed in this chapter.

The factorial survey has investigated risk perceptions and its effect on occupational therapy practitioners discharge decisions using a novel and innovative approach. Using the experimental method of randomisation has maximised orthogonality to measure the

effect strenght of positive risk-taking barriers. This has provided a clearer relationship between the variables which is unique in comparison to the research studies identified in this part of the chapter. However, this programme of research both compliments and builds upon the Atwal et al. (2012) and Reich et al. (1998) studies and provides new implications for occupational therapy practice, education and future research which will be discussed in the next section.

7.8 Implications

In this part of the chapter the implications will be discussed before making an assessment on this research programme's contribution to knowledge.

7.8.1 Implications for practice

Occupational therapy intermediate care policy and guidance recommends employing positive risk-taking (NICE, 2017; RCOT, 2017). In Phase 1 of this research programme, the scoping review found no empirical studies that have directly investigated positive risk-taking in this context to support such recommendations. In addition to confirming common areas of risk and identifying prevalent positive risk-taking barriers, these barriers have been found to impact decision making, especially, in novice occupational therapy practitioners. The positive risk-taking barriers that have been found to have the most effect relate to the 'Limited Capacity', 'No Support' at all experience levels and the 'Blame Culture' barrier in the Semi-expert group only. This information would be

of use to providers of intermediate care services and those occupational therapy educators which supervise occupational therapy students on their fieldwork placements.

In respect of novice occupational therapy practitioners these key findings are very important, they can be used to focus on specific areas of development, especially, in respect of a clients 'Limited Capacity' as this factor is very relevant considering its effect strength on the Expert group in the factorial survey. Moreover, providing access to peer support and mentorship with expert occupational therapists are likely to have great benefit for those working towards acquiring expertise in risk related decision making at the point of discharge. Additionally, such access to expertise is likely to be of benefit to occupational therapists who fall into the Semi-expert category, to promote their confidence and reduce fear through working in a perceived blame culture. Such support is also required through the chain of supervision to promote a culture based on learning from errors rather than focused on attributing culpability and potentially reinforcing or creating a culture of blame.

7.8.2 Implications to occupational therapy education

This programme of research has presented the complexities in risk related decision making and that student and occupational therapists in the preceptorship phases of their career perceive risk and positive risk-taking barriers differently in comparison to experts. Moreover, they are likely to employ more analytical and procedural methods in their reasoning as they do not possess expert intuition and tacit knowledge built from years of experience. For novice occupational therapy practitioners, this highlights that

evidence-based recommendations are required for intermediate care practice to ensure that positive risk-taking decisions are made appropriately and in line with research that focuses on the distinctive aspects of intermediate care as a short-term rehabilitative model. Moreover, this programme of research together with other risk related studies provide useful information for standardised risk assessments in occupational therapy intermediate care. Considering previous research supports occupational therapy students/novices rely on procedural reasoning (Reich et al., 1998; Roberts, 1996; Strong et al., 1995) indicates a standardised risk assessment is appropriate to support their decision making under risk whilst on fieldwork placements or as they begin their careers as qualified occupational therapists.

The key findings in this research programme relate to the risk prone area of discharge. The risk domain of falls has been found to be the most common risk. Moreover, impactful positive risk-taking barriers 'Limited Capacity', 'No Support', 'Blame Culture' and Risk Averse Family' provide complexity in decision making. These findings can be used to target education and to develop training tools to support those beginning their occupational therapy career. These factors provide specific areas where decision making may be challenging, focusing on risk assessment in relation to these key findings as part of professional reasoning and decision-making during pre-registration courses would be advantageous prior to working in intermediate care. Moreover, utilising expert knowledge to construct or adapt risk assessment for novice practitioners would support their confidence, education and promote their professional development.

7.8.3 Implications for future research

Providing evidence-based recommendations to support positive risk-taking policy and guidance and developing training programmes and educational tools requires further research. This chapter has presented and compared this research programme against related empirical studies. Together they emphasise the importance of understanding occupational therapists risk perceptions in relation to decision making across different levels of experience. These studies also demonstrate the benefits of mixed methods research to identify relevant decisional factors, arrange them by consensus, explore their meaning, create scenarios that approximate these risks and to experimentally test their effect on a decision. Such approaches are required in combination to truly investigate risk in complex areas of practice (i.e., occupational therapy intermediate care).

This research programme has focused on three different levels of experience, Novice, Semi-expert and Expert. Future research could continue to focus on these groups propensities to embrace risk in respect of other decisional factors to gain further insight into risk related decision making. This could be focused on increasing tolerances towards risk and / or effective risk management in relation to recommending positive risk-taking, ethical dilemmas, promoting confidence in autonomous practice, decision making and producing standardised risk assessments. Additionally, further research could be directed at obtaining a richer understanding of Semi-experts' attitudes and opinions of 'Blame Culture' as found as a statistically significant factor in the factorial survey. This would be best achieved through qualitative investigation. Investigating a

culture of blame as perceived by occupational therapists may provide important insight in the context of risk taking.

In extending this area of investigation beyond this PhD programme, the researcher (student) has been awarded a Royal College of Occupational Therapists Career Development Grant to conduct a qualitative study focusing on discharge risk management and positive risk-taking in intermediate care services in the context of Covid-19. This offers an opportunity to carry on this research to support positive risk-taking policy and guidance.

7.8.4 Contribution to knowledge

This research programme has important messages that identify what is already known in the literature and perhaps equally as important what is not known. Also, it has used multiple research methods of investigation which have produced important findings for decision making under risk in occupational therapy intermediate care. This part of the chapter will look at the contribution the scoping review, consensus study by NGT and factorial survey make to occupational therapy.

The scoping review has provided ten risk domains and identified three risk characteristics therein. The risk characteristics elucidate prominent themes, risk awareness and identifying risk, decision making under risk and improving safety in relation to the risk domains. The scoping review contributes to occupational therapy risk

related research, it highlights that risk has not been the focus in many studies and this includes how positive risk-taking is employed. The scoping review findings are important, in that they emphasise the disparity between the amount of research in comparison to the high risk associated with intermediate care and the professional requirements of risk management. They have identified gaps in knowledge, highlighted the extent and quality of existing research and the methodologies used, thereby, drawing attention to where future research may be targeted. In this context, it is an important study in this research programme and contributes important messages to service provision and or to those researching risk in occupational therapy intermediate care.

The consensus study by NGT contributes to knowledge as it is one of the first studies known to the researcher (student) which has investigated the common areas of risk and positive risk-taking barriers from the experiences of intermediate care occupational therapists. It has shown that there are many diverse risks and numerous positive risk-taking barriers. Triangulating these results with the scoping review findings confirms these have not been investigated to any great extent by other occupational therapy risk related studies, confirming this study's importance. These risks and barriers have provided a hierarchy of considerations for practice, education, and future research. This study also contributes to knowledge by elucidating a systematic and rigorous process to produce and validate vignettes. In this context, NGT methodology compliments vignette construction and factorial survey methodology.

The factorial survey results have provided the relationships between the 'Limited Capacity', 'No Support', 'Blame Culture' and 'Risk Averse Family' positive risk-taking

barriers. This study has elucidated which barriers have the most effect strength on Novice, Semi-experts and Experts decisions whether to recommend a home discharge. As with its preceding studies it is an original and unique investigation which stands alone in occupational therapy risk related research. In this respect and in relation to the researchers (students) knowledge, it is the first study of its kind which has directly addressed positive risk-taking barriers in occupational therapy intermediate care discharge decision making.

The factorial survey found Novices are risk averse by comparison to the other groups with more experience, Semi-experts were the only group where 'Blame Culture' had a statistically significant effect on their decisions to recommend a home discharge and the 'Limited Capacity' factor was the most relevant to Experts as indicated by its effect strength. In the context of occupational therapy interventions which employ positive risk-taking, these findings are both relevant and the lack of previous research confirms their contribution to occupational therapy, in that they address a gap in knowledge.

7.8.5 Recommendations

In the context of these implications for practice, education, and future research the following recommendations are proposed:

- Occupational therapy educators including those involved in pre-registration courses and those who supervise fieldwork placements for student occupational

therapists could use this research programmes' findings to support professional reasoning and decision making in relation to positive risk-taking at the point of discharge. This includes facilitating access to standardised risk assessments which reflect the risks associated to discharging older adults, especially in respect of fall prevention.

- Occupational therapists that are neither novices nor experts working in intermediate care or community settings that conduct hospital to home assessments may feel they need to be risk avoidant owing to a perceived blame culture. Access to peer support, clear organisation policy and guidance in relation to risk, providing appropriate training as part of professional development (if required) and to develop more supportive approaches to investigating error which seeks to learn from mistakes rather than proportion blame would be important to creating a different culture.
- The lack of empirical studies that investigate positive risk-taking with older adults in intermediate care in an occupational therapy context must be addressed. Further research should be focused on supporting decision making whilst addressing the key considerations and factors involved in these decisions. Such research has the capacity to support guidance and consequently change how risk is perceived and promote occupational therapists to embrace risk. Knowing the differences in decision making propensities at different experience levels can be used to support those with less experience and to learn from those with more experience. This will achieve a balanced patient safety orientated culture where occupational therapists at any experience level are capable and feel confident with the complexities of risk as they arise in service provision.

7.9 Conclusion

This programme of research has conducted a scoping review, a consensus study by NGT and a factorial survey. The key findings affirm discharge as a common risk prone area of practice and falls as the most common area of risk. These risks are relevant to older adults with complex care needs and reduced functional capacity resulting from multiple medical conditions, physical impairments, and disabilities who access intermediate care occupational therapy services.

Older adults can be highly variable to rehabilitation, especially, during a period of convalescing after hospitalisation. This can create conditions which are not conducive with maintaining a client's safety and pose real dilemmas of risk where the harms and benefits of exercising one choice over another can carry equal weights, thus making positive risk-taking challenging. There are many potential challenges to making decisions relating to positive risk-taking and this research programme has identified four positive risk-taking barriers which have been found to impact the decisions of occupational therapy practitioners at different levels of experience.

The positive risk-taking barriers, 'Limited Capacity' and 'No Support' have been found to have a strong and statistically significant effect on Novice, Semi-experts, and Experts, and 'Limited Capacity' had the strongest effect in the Expert group. The 'Blame Culture' factor had a statistically significant effect only on Semi-experts. The 'Risk Averse Family' positive risk-taking barrier was not statistically significant, although with the other positive risk-taking barriers it did reduce the propensity to

recommend a home discharge in all groups and this was a statistically significant finding. Novices were least likely to recommend a home discharge and the likelihood to recommend in this context increased with experience.

There is an interrelatedness to the key findings and an important consideration in transitioning older adults from hospital to their homes involves assessing whether they are at the risk of falling. Falls prevention is a key strategy to preventing potentially catastrophic outcomes with older adults where falling could mean serious injury and increase the risk of disability and mortality. The risk of falls increases with clients who have limited or fluctuating capacity. Older adults that face such challenges will find engaging with their activities of daily living problematic with issues relating to their attention and memory. This also impacts their ability to adopt falls prevention strategies, and this is likely to reduce their scope to remain independent. In this context, it is unsurprising that experts in the factorial survey were most effected by the 'Limited capacity' factor.

Risk related decisions are likely to be complexified further at the point of discharge where those accessing occupational therapy intermediate care services are transitioning from dependent care to minimal care arrangements or face no support upon returning home. Such transitions are likely to be expedited to reduce pressures on acute care services and increase hospital bed capacity with discharge step down initiatives that aim to rehabilitate patients in their homes. This is advantageous for hospitals, but it comes at a cost to social care and increases demands on services designed to keep people safe during such transitions i.e., intermediate care services.

Having the appropriate level of support for older adults at the interface between hospital and home can help their recovery and reduce the likelihood of readmission. However, social care services are under extreme pressure to meet the demands of a growing older adult population. Many older adults leaving hospital in need of social care are left to struggle to find support and family caregivers often fill this need and provide support on their own. This evidences why occupational therapists have identified no support as a positive risk-taking barrier and affirmed it to have a strong effect on their propensity to recommend a home discharge. Additionally, concerns to the amount and quality of support an occupational therapy client is likely to receive at the point of discharge can be aggravated by a client having a limited capacity to understand the risks associated with such a transition and the risks in relation to looking after themselves in their own home. Such risks if realised may result in harmful consequences which could be life changing to the client and their family. Perceiving risk this way and without considering the benefits of engaging with risk is likely to invoke a fear of risk taking. Family caregivers may adopt risk avoidant behaviours which are likely to negate positive risk-taking and whilst this is understandable it is not desirable from an occupational therapy perspective as such behaviours have the capacity to inhibit a client's progress.

Novice occupational therapy practitioners were found to be the group least likely to recommend a home discharge. This finding potentially reflects a lack of knowledge and experience on how to mitigate complex multidimensional risks and positive risk-taking barriers as required in occupational therapy interventions at the interface between hospital and home. Those with more experience than novices and still developing expertise appear to be more effected by blame culture when making risk related discharge decisions. Having not fully developed the confidence and resilience to

overcome the fear of employing positive risk-taking in older adults with complex needs is likely only to come with expertise and lessen the effect of working in a culture of blame. Although experts appear not to be impervious to blame culture in relation to the factorial survey findings. Moreover, novice occupational therapists are likely not to have been so exposed to a blame culture or have been protected from by occupational therapy supervisors and mentors. This would explain why novices were least effected by the blame culture positive risk-taking barrier.

This programme of research highlights there are positive risk-taking barriers that do have the capacity to reduce the likelihood to recommend a home discharge and their effect is not universal between different experience levels. Also, these barriers have the capacity to effect other risk related decisions, ultimately, this is likely to undermine the effectiveness of occupational therapy intermediate care provision and impact a client's progress. Moreover, the positive risk-taking barriers identified in this research programme are likely to effect decisions of occupational therapists working in community and rehabilitative settings that aim to promote older adult independence and safety. Additionally, the findings in this research programme will be useful to occupational therapy intermediate care providers, occupational therapy educators preparing students for intermediate care fieldwork and to the occupational therapy research community investigating risk related decision making in the context of older adult care.

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Appendix 1

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Participants needed for a video conference expert panel to decide upon the common risks experienced in older persons' occupational therapy

Dear colleague,

I hope this letter finds you well and thank you in advance for taking the time to consider being a participant in my study.

I am a PhD student at Northumbria University conducting research into how experience affects the strategising and decision making of risk in the care of older people accessing home based, reablement, bed-based and crisis response services.

With help from you this study aims to convene an expert panel of post-registration occupational therapists and employ a nominal group technique to seek consensus and prioritise those common areas of risk that are synonymous with these areas of practice.

Using real time video conferencing the expert panel will answer two questions. Each question will be considered independently in four stages which are, the silent generation of responses, a 'round robin' to record these responses, a discussion stage and a voting stage to prioritise these responses.

This study is integral to the overall success of the project as the results will be used to produce risk vignettes which will then be used in systemically controlled experiment(s) in order to compare the risk strategies employed by experts, semi-experts and novices.

As your participation is solely required as a member of a Royal College of Occupational Therapists (RCOT) Specialist Section – Older People, please be advised that this study will be conducted in the early evening outside of normal working hours (9-5pm) in order not affect your day to day working commitments.

If you are interested in participating in this study, please contact me at c.newman@northumbria.ac.uk for further participant information. In respect of maintaining data security, please do not forward on this letter.

With best wishes,

Craig

Appendix 2

Northumbria University
NEWCASTLE

Title

Prioritising the risks encountered by older adults in intermediate care services: An occupational therapy expert panel video conference / nominal group technique

Participant Information Sheet

You are being invited to take part in this research study.
Before you decide whether you wish to take part it is important for you to read this leaflet so you understand why the study is being carried out and what it will involve.

Reading this leaflet, discussing it with others, or asking any questions you might have will help you decide whether or not you would like to take part.

What is the purpose of the study?

The aim of this study is to seek consensus and prioritise the risks associated with the care of persons accessing home based, reablement, bed based (including acute care discharge) and crisis response services. The convening of an expert panel with first-hand experience in those persons accessing these services and the risk decisions that have to be made in their care is integral to the success of this study.

This study is the second of three phases of a doctoral research project. The purpose of this project is to compare the cognitive strategies of expert, semi–expert and novice practitioners when making decisions about common risks encountered by those persons accessing intermediate care services.

In the final phase of the project, risk vignettes will produced from this study and used in systemically controlled experiment(s) to compare what effect experience has on making decisions involving risk. Comparing what effect novice to expert levels of experience has on risk taking behaviour will assist in the development of training methods and tools for both professional and student therapists in relation to their decision-making under risk.

What is the recruitment process and why have I been invited?

This study seeks ten post-registration occupational therapy participants with three or more years of experience in older person's occupational therapy. Additionally, all participants must belong to the Royal College of Occupational Therapists (RCOT) Specialist Section – Older People and have experience in one or more of the following practice settings: bed-based, reablement, home-based and crisis response services. The study will employ a sampling strategy to ensure that there is (where possible) an equal representation from these services and to ensure the recruitment does not exceed ten participants. This may require some potential recruits to be rejected from participating in this study. In the event you have volunteered, and your services are not required, you will be notified as soon as practicable (by email) and given the option to participate in lieu of any volunteers withdrawing. This email will be sent no later than two weeks (or more) prior to the proposed date of the study.

You have been asked to participate in this study because of your expertise in older person's occupational therapy and your experience in making decisions of care that involve risk. Occupational therapists not associated with the RCOT Specialist Section – Older People or with less than three years' experience as a post registration occupational therapist will be excluded from this study. As your participation is solely required as a member of a RCOT Specialist Section – Older People, please be advised that this study will be conducted in the early evening outside of normal working hours (9-5pm) in order not affect your day to day working commitments.

Do I have to take part?

No. It is up to you whether you would like to take part in the study. I am giving you this information sheet to help you make that decision. If you do decide to take part, remember that you can stop being involved in the study whenever you choose, without telling me why. You are completely free to decide whether or not to take part, or to take part and then leave the study before completion.

What will happen if I take part?

Shortly after agreeing to take part, you will be sent an email with a proposed date and time of the study together with instructions on how to access the video conferencing software. In accordance with Northumbria University's I.T. regulations and data protection policy, this software will be a secure web based platform and accessible only to those who have agreed to participate in the study.
The study will begin with an introduction that will include an overview of its purpose, the study design and timings. This study will take approximately 2 hours from start to finish and will include a nominal group technique to answer two questions relating to the risk of older persons' occupational therapy.

Introduction - 10 minutes

Silent reflection (first question) – 5 minutes
Round robin (individual) – 15 minutes
Clarification/grouping of ideas (group) – 10 minutes
Ranking (prioritising) the answers – 10 minutes

Break - 5 minutes

Silent reflection (second question) – 5 minutes
Round robin (individual) – 15 minutes
Clarification/grouping of ideas (group) – 10 minutes
Ranking (prioritising) the answers – 10 minutes

Conclusion feedback/discussion – 10 minutes

A virtual white board will be used to collate the round robin responses and to arrange these responses during the clarification/grouping stage. This virtual whiteboard will be made available for all the participants to view in real-time. Using the information collated each participant will rank and prioritise the responses using the 'participants ranking form' and this will be carried out individually and sent securely via email to craig.newman@northumbria.ac.uk before the study concludes.

What are the possible benefits of taking part?

There may be no direct benefit to you. The information we get from the study will help inform future studies researching the risks older people are confronted with in home based, reablement, bed based (including acute care discharge) and crisis response services. As a direct benefit the information from this study will be used to produce risk vignettes and with the use of these vignettes, systemically controlled experiment(s) will be conducted to compare the effect experience has on making decisions involving risk, in the final phase of this research project.

What are the possible disadvantages of taking part?

We do not anticipate any significant disadvantages in taking part in the study other than the time taken to participate in the video conference/nominal group technique. Either choosing to participate or not participate in the study will not affect you or your professional capacity as an occupational therapist.

This study will have no face-to-face contact and will utilize video conferencing software that can facilitate the group to meet in an secure virtual environment. Participating in this video conference does require the use of a display screen device (DSE) capable of receiving and sending audio-visual information by accessing the internet. The use of remote DSE's in this study falls outside of the control measures, responsibilities and device security outlined in Northumbria University's I.T. regulations. Where practicable participants must ensure their DSE's are secure, free from malware/virus and appropriate for up to 2 hours of use.

Additionally, whilst there is a low risk that the overuse or improper use of DSE may cause fatigue, eyestrain, upper limb problems and backache. Participants are advised to adjust their environments, lighting and to allow sufficient space when participating in this study. It is also important that your DSE is easy to use, positioned correctly and the brightness and contrast are adjusted to suit the lighting conditions.

Will my taking part in this study be kept confidential and anonymous?

Yes. We will follow ethical and legal practice and all information about you will be handled in confidence. This study does not require any personal information other than an email address and use of a name within the video conference. However, this information <u>will not</u> be needed on any subsequent report and/or document produced from this study. Your 'consent form', 'participant experience (anonymised) forms' and 'ranking (anonymised) forms' will be collected electronically via a secure email connection and moved to a password protected shared drive. At no time will any information relating to your identity be transferred to any physical format outside of Northumbria University's I.T system.

Only researchers authorised by Northumbria University will be able to access/analyse the study data. The only exception to this will be if authorised persons are required to check the study is being carried out correctly. All persons who view the study data will have a duty of confidentiality to you as a research participant. The only exception to this confidentiality is if the researcher feels that you or others may be harmed if the information is not shared.

How will my data be stored, and how long will it be stored for?

All electronic data including the consent forms, participant previous experience and the ranking forms will be stored on the University drive, which is password protected. After the collection of the consent forms, participant experience information and ranking forms your email contact information will no longer be required and will be deleted. Upon completion, the data from this study will be stored for 3 years and this will be done securely. All data will be stored in accordance with Northumbria University's data storage guidelines and the Data Protection Act 2018 and only accessed by those authorised to do so.

What categories of personal data will be collected and processed in this study?

The personal data that will be collected is your name as stated on the consent form and email/email communications, your length of service as an occupational therapist and your previous work/practice experience. Your length of service and previous work/experience is required for purposive sampling and to describe the sample/group for any subsequent dissemination of the study's findings. This will be done only to describe the sample/group and not any individual participant involved in this study. Therefore, the participant experience and ranking form are anonymised and are not required for any individual data analysis/presentation. Additionally, your email address and communications will be deleted at the conclusion of the study.

This study does not require any comparison of any individual participant's characteristics and/or demographical information as the data analysis is solely

based on group consensus. This will be achieved by counting and disseminating the frequency of responses from the (anonymised) ranking sheets, which will be presented as group findings.
The video conference will not be recorded for the purposes of data analysis and your name as it appears on this application/software will be deleted at the end of the session. Additionally, your name will not be disclosed at any time after this study and will only be kept on your consent form securely for 3 years in adherence with Northumbria University's research data storage policy.

Who are the recipients or categories of recipients of personal data, if any?

No-one outside of the University of Northumbria will have access to your personal data.

What will happen to the results of the study and could personal data collected be used in future research?

It is intended that the findings from the video conference/nominal group will be reported in an occupational therapy journal and/or presented at a research conference. Subject to agreement, the RCOT will be sent the findings in advance of any submission for publication and/or dissemination at a research conference.

You will not be identified in any report or publication and all the study data will be anonymised. We will be able to provide you with a summary of the study findings if you email the lead researcher at the address shown below.

There is the possibility that the data collected in this study may be used for future research, in this situation, data will remain anonymised and any identifiable data will be kept secure.

Who is Organizing and Funding the Study?

The research is being organised and funded by Northumbria University.

Who has reviewed this study?

Before this study could begin, permissions were obtained from Northumbria University. The Faculty of Health and Life Sciences Research Ethics Committee have reviewed the study in order to safeguard your interests and have granted approval for it to be conducted.

What are my rights as a participant in this study?

As a participant of this study you have a right of access to a copy of the information comprised of your personal data; a right to have inaccurate personal data rectified; and a right to object to decisions being taken by automated means. If you are dissatisfied with the University's processing of your personal data, then you have the right to complain to the Information

Commissioner's Office. For more information, see the ICO website (https://ico.org.uk/).

Contact for further information:

Lead researcher: Craig Newman (craig.newman@northumbria.ac.uk)
Supervisor: Phillip Whitehead (phillip.whitehead@northumbria.ac.uk
Name and contact details of the Data Protection Officer at Northumbria University: Duncan James (dp.officer@northumbria.ac.uk)

Thank you for taking the time to read this information pack

Appendix 3

Northumbria University NEWCASTLE

CONSENT FORM

Project title

Prioritising the risks encountered by older adults in intermediate care services:
An occupational therapy expert panel video conference / nominal group technique

Principal Investigator: Craig Newman BSc Occupational Therapy (PhD researcher)

Please tick or initial where applicable –

I have carefully read and understood the Participant Information Sheet. ☐
I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers. ☐
I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice. ☐
I agree to take part in this study. ☐
I also consent to the retention of this data under the condition that any subsequent use also be restricted to research projects that have gained ethical approval from Northumbria University. ☐

Signature of participant.....

Date.....……..

(NAME IN BLOCK LETTERS).....

Signature of researcher.....
Date.....……..

(NAME IN BLOCK LETERS).....……

Appendix 4

Northumbria University NEWCASTLE

Prioritising the risks encountered by older adults in intermediate care services: An occupational therapy expert panel video conference / nominal group technique

Participate experience form

Current role	I am a post-registration occupational therapist. Yes or No (please indicate)

Length of experience as an occupational therapist ___ years ___ months (please state)

Please tick or initial where applicable –

I have experience in home based services. ☐

I have experience in crisis response services. ☐

I have experience in bed based care service(including prevention and/or avoiding premature admission to acute services and facilitating timely discharge from acute care) ☐

I have experience in reablement services ☐

Any other services? (where you have worked with older persons as an occupational therapist)

Please state here:
……
……
……
……
……
……
……

Appendix 5

Title:

Prioritising the risks encountered by older adults in intermediate care services: An occupational therapy expert panel video conference / nominal group technique

Ranking sheet

Risk	(1) rare	(2) uncommon	(3) occasionally	(4) common	(5) very common

Please type in the risk (left column) and tick where appropriate

Appendix 6

Risk Assessment Form

Date: 06/03/2020	**Assessor: Craig Newman Occupational Therapist BSc (lead researcher)**	
Area/Activity: Research – Video conference using - Blackboard Ultra	**Assessment Title:** **Occupational therapy expert panel video conference / nominal group technique**	

Item No.	Activity, Equipment, Materials, etc.	Hazard	Persons at risk	Severity	Likelihood	Risk Rating H 20-36 M 12-18 L 1-10	Control Measures Required	**Final Result***
1	***Display screen equipment (DSE)***	***Over use or improper use of DSE, which may cause:-***	***Research Facilitators and participants***	***2***	***3***	***6 (L)***	• ***Ensure forearms are horizontal and eyes are same height as the top of the screen*** • ***Make sure the screen is in focus, stable, clean, and free from flicker*** • ***When using portable DSE consider using a hard surface to avoid long awkward***	***2x2= 4 (L)***

		fatigue, eye strain, upper limb problems and backache					***postures and eye fatigue through changes in focusing.*** • ***Adjust brightness and contrast to suit the lighting conditions*** • ***Choose larger text options if text is difficult to read*** • ***Make sure there is enough workspace. If using a desk make sure there is enough leg space*** • ***Adjust position of the DSE to avoid glare and bright reflections. Use blinds/curtains to prevent intrusive light*** • ***Consider using a foot rest to avoid excessive pressure on the back of the legs*** • ***If using a keyboard make sure, there is sufficient space to rest your hands and wrists. Keep your wrists straight where possible.*** • ***When using a mouse make sure it is within a comfortable reach. Consider moving the keyboard when not in use. Support the forearm on the desk and do not grip the mouse too tightly or press (click) to harshly*** • ***Stretch and/or change position to avoid fatigue*** • ***Frequent breaks every 45 minutes or when required*** • ***Research facilitators to access/adjust workstations/environments prior to DSE use*** • ***Participants to access their own work environments and DSE. Best practice and risk reduction information to be provided on the*** *participant information forms.*	

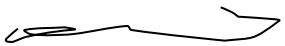
2	***Remote DSE***	***Malware/viruses***	***Personal data - Research Facilitators and participants***	***2***	***3***	***6 (L)***	• ***Participants information sheets to convey the importance of device security*** • ***Research facilitators to use a private and secure workstation at Northumbria University, if this is impracticable owing to COVID 19 concerns, facilitators must ensure any remote DSE's used are secure and fit for purpose to protect the participants personal data.***	***2x2= 4 (L)***

Does this Risk Assessment Require Further Specific Risk Assessment: NO

Manual Handling: Y/N Please list reference No:	COSHH: Y/N? Please list reference No:	PUWER: Y/N? Please list reference No:	DSEAR: Y/N? Please list reference No:	Young Persons: Y/N? Please list reference No:	New & Expectant Mothers: Y/N? Please list reference No:

To be completed by the person undertaking the risk assessment

Name: **Craig Newman** **Job Title: PhD researcher**

Signature:  **Date: 18/03/2020**

To be completed by the Line Manager

I consider this risk assessment to be suitable and sufficient to control the risks to the health & safety of both employees undertaking the tasks and any other person who may be affected by the activities.

Name: Phillip Whitehead **Job Title: Associate Professor**

Signature:  **Date:18/03/2020**

NB – If Line Managers do not agree that the risk assessment is suitable and sufficient then the assessment must be reviewed and amended accordingly.

To ensure we are consistent in managing safety risks across the UNN please answer the following question and take any appropriate action: -

1. **Can this risk assessment be shared and labelled as Generic to the University i.e. is the activity carried out within another faculty or department?** Y/ N
2. **Is there a related risk assessment that may require review and update following completion of this risk assessment?** Y/N

Calculating the risk rating

Risk = Likelihood x Severity

Likelyhood			X	Severity		
Remote	=	1		Near miss	=	1
Unlikely	=	2		Minor injury	=	2
Possible	=	3		Lost time	=	3
Likely	=	4		Major injury	=	4
Very Likely	=	5		Fatality	=	5
Certain	=	6		Multiple fatality	=	6

Severity 1 to 6

Likelihood 1 to 6

	Near miss	Minor injury	Lost time	Major injury	Fatality	Multiple fatality
Remote	1	2	3	4	5	6
Unlikely	2	4	6	8	10	12
Possible	3	6	9	12	15	18
Likely	4	8	12	16	20	24
V Likely	5	10	15	20	25	30
Certain	6	12	18	24	30	36

Acceptable region: no need to do more

Tolerable region: Reduce risk as low as reasonably practicable

Unacceptable region: MUST reduce risk to at least tolerable

Appendix 7.

NGT and Factorial survey evaluation forms

An online factorial survey to investigate risk judgments in novice, semi expert and expert occupational therapists in relation to supporting older people

Q1
Participant information

- **Did you feel informed?**
- **Did it describe the research activity?**
- **Was there information relating to consent?**

Please select	**Needs improvement**				**Excellent**
	1	2	3	4	5

Comment

Q2

Survey organisation

- **Survey well organised?**
- **Easy to follow?**
- **Did you manage to complete the survey within 45 minutes?**

Please select	**Needs improvement**				**Excellent**
	1	2	3	4	5

Comment

Q3 Study objectives

- **Did the study make clear what to do?**
- **Did you feel your risk judgement was being tested?**

Please select	**Needs improvement**				**Excellent**
	1	2	3	4	5

Comment

Q4

Presentation and communication

- **Did the vignettes make sense?**
- **Did they represent typical occupational therapy examples?**
- **Were they easy to read (font size, layout)?**

Please select	**Needs improvement**				**Excellent**
	1	2	3	4	5

Comment

Q5

Do you have any other comments?

Comment

Appendix 8. Report of statistical assumption testing

This report refers to the statistical assumptions tests and their results in relation to whether the assumptions were met to support the reliability of the multiple regression and One-way ANOVA analysis. Statistical assumptions are there to ensure that the results generated and reliable and valid. All decisions pertaining to whether the following assumptions were met were discussed at the researchers (student) supervisory meetings.

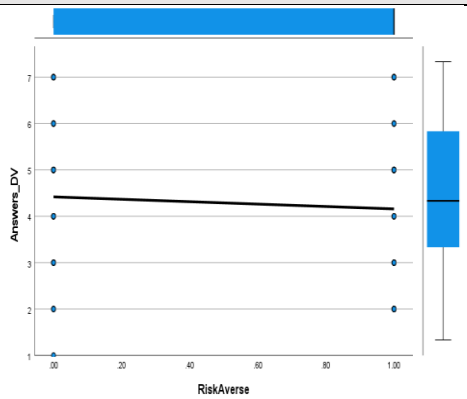
Linearity

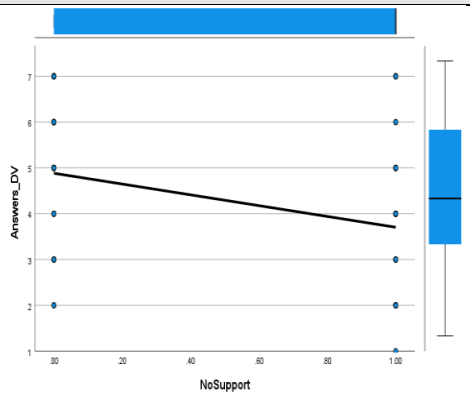
Linearity is arguably the most important assumption to meet. The relationship between the IVs and the DV must be linear in order to use a regression model (Cohen, 2015). This study used dummy variables in replacement of the nominal variables, 1 to indicate the presence of the positive risk-taking barrier and as 0 to indicate the presence of the positive risk-taking facilitator. Regressing dichotomous dummy variables on a dependent variable creates linearity, therefore, this assumption was met. The extent of the linearity for each IV in each group can be seen on the figures entitled ‘Dummy variable linearity’. The dependent variable (Answers_DV) is on the vertical ‘y’ axis and this represents the 1 to 7 measurement scale. The X (horizontal) axis represents the independent variable for each positive risk-taking barrier. On the left of the ‘x’ axis, the value ‘0’ indicates the IV (facilitator) and the right of this axis, the value ‘1’ indicates the IV (barrier). In all cases where the IV was introduced resulted in a decrease in the DV indicating linearity. Additionally,

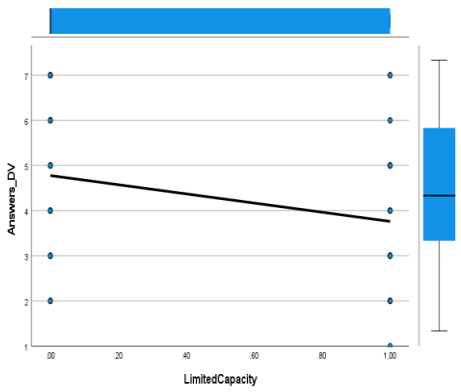
Dummy variable linearity figures, include a box plot to indicate the distribution of numerical data and skewness through the data quartiles, however, this analysis was not used to establish linearity.

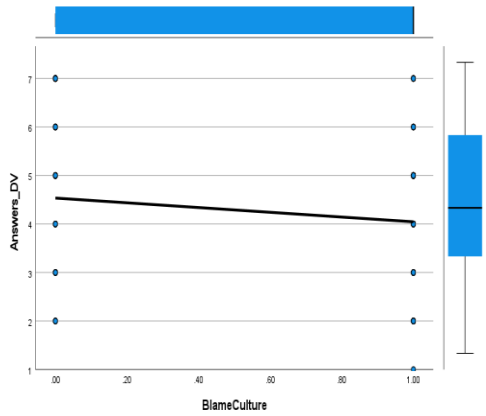
Dummy variable linearity.

Novice

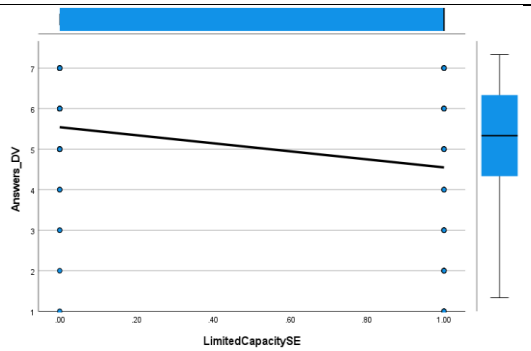


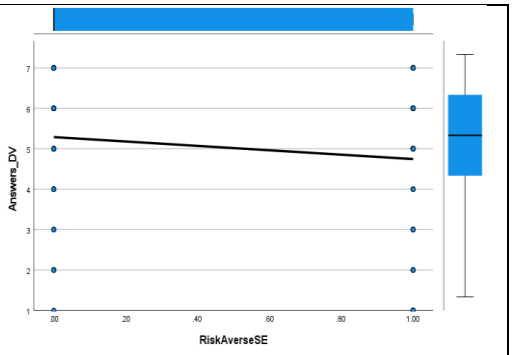


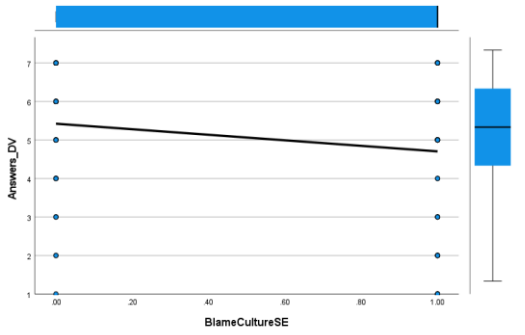


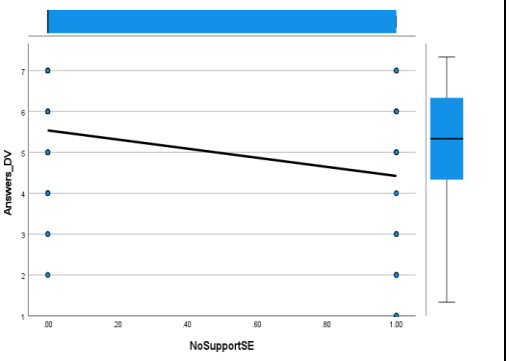


Semi-expert

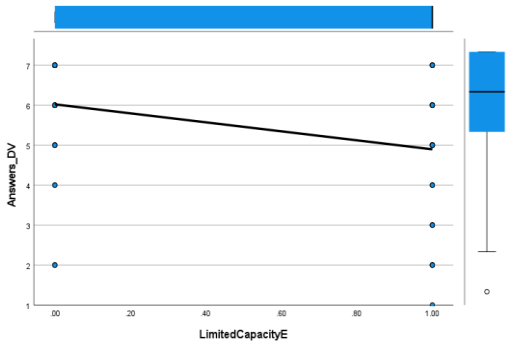

Answers_DV
LimitedCapacitySE

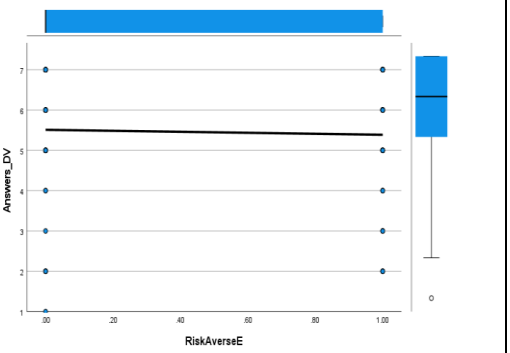

Answers_DV
RiskAverseSE

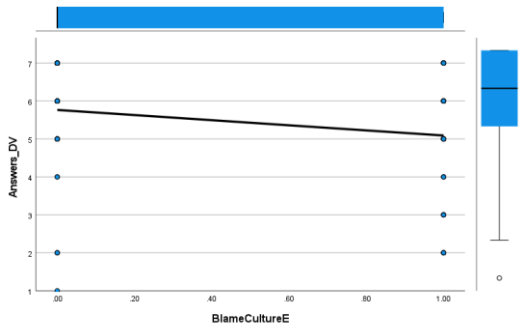

Answers_DV
BlameCultureSE

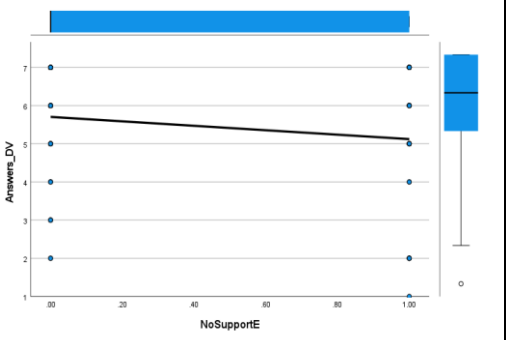

Answers_DV
NoSupportSE

Expert


Answers_DV
LimitedCapacityE


Answers_DV
RiskAverseE


Answers_DV
BlameCultureE


Answers_DV
NoSupportE

No multicollinearity

Multicollinearity in regression analysis occurs when two or more independent variables are highly correlated to each other, such that they do not provide unique or independent information in the regression model (Field, 2017). Creating vignettes and a factorial design which reduced the likelihood for confounding and non-orthogonality promotes uncorrelated variables. The effectiveness of this can be tested using a Pearson correlation coefficient test and the Variance Inflation Factor and tolerance indices.

The Pearson coefficient correlation measures the linear association and relationship between two or more sets of paired variables (Pathak, 2011). The output of this test is presented between -1 and 1, where values closer to these would be considered highly correlated (e.g., +/- 0.9). For reporting purposes, moderate to high correlation were defined as being from +/- .2 to being fully correlated (1 or -1). As part of the regression output a Pearson coefficient correlation was produced for each of the groups. In the Novice group a correlation was found (-.241) between the 'Risk Averse Family' and 'Limited Capacity' variables.

Variance inflation factor (VIF) measures the degree of multicollinearity or collinearity in the regression model. In this context, it would be appropriate to check any moderate to high correlations as indicated by the Pearson coefficient correlation test in relation to their effect (if any) on the regression model using the VIF and tolerance results.

Whilst there are no precise parameters to determine these effects on a regression model, it is generally accepted that VIF results close to 1 confirm no or little multicollinearity. The ‘tolerance’ in the output is a reciprocal of VIF (Field, 2017), hence the lower it gets to zero the more multicollinearity has been found. The highest VIF (lowest tolerance) score was found in the Novice group, and this was against the ‘Risk Averse Family’ variable (VIF 1.119 & tolerance .894) confirming very low multicollinearity, therefore, this assumption was met.

Residual errors and outliers

Residuals have the capacity to violate the assumptions of homoscedasticity, normality, and independence.

Homoscedasticity is where the variances of the residuals is not constant, thereby, potentially having the capacity to compromise regression findings (Cohen, 2003). A visual assessment method can be used to detect this problem (Cohen, 2003). A graph was used to plot the standardised predicted values on the ‘x’ axis against the standardized residuals of the model on the ‘y’ axis as seen on ‘Residual scatterplots by group’ figures.

If the scatterplot confirms there is a pattern, then potentially this assumption is violated. However, patterns and levels of heteroscedasticity, that being a specific pattern of residuals can vary (Cohen, 2003). Field (2017) asserts that funnelling is

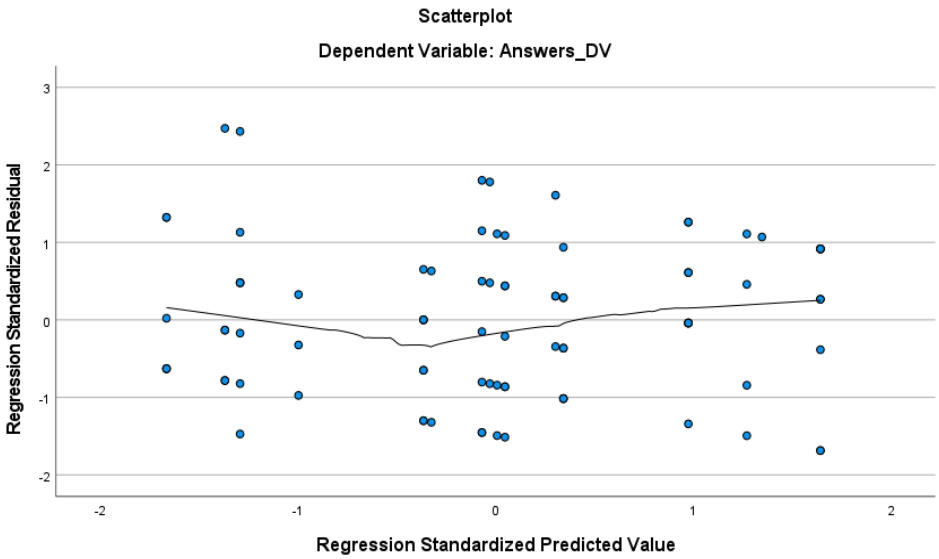
often associated with heteroscedasticity and curves in the data can bring linearity into doubt. In this context, the residual scatterplots do not present extreme examples of heteroscedasticity and or non-linearity, Moreover, and as previously determined the linearity assumption has been met.

In relation to the residual scatterplots, the residuals that are dispersed above zero on the y axis appear to have some degree of heteroscedasticity in all groups but especially in the expert group. Below zero on the y axis is homoscedastic for all groups.

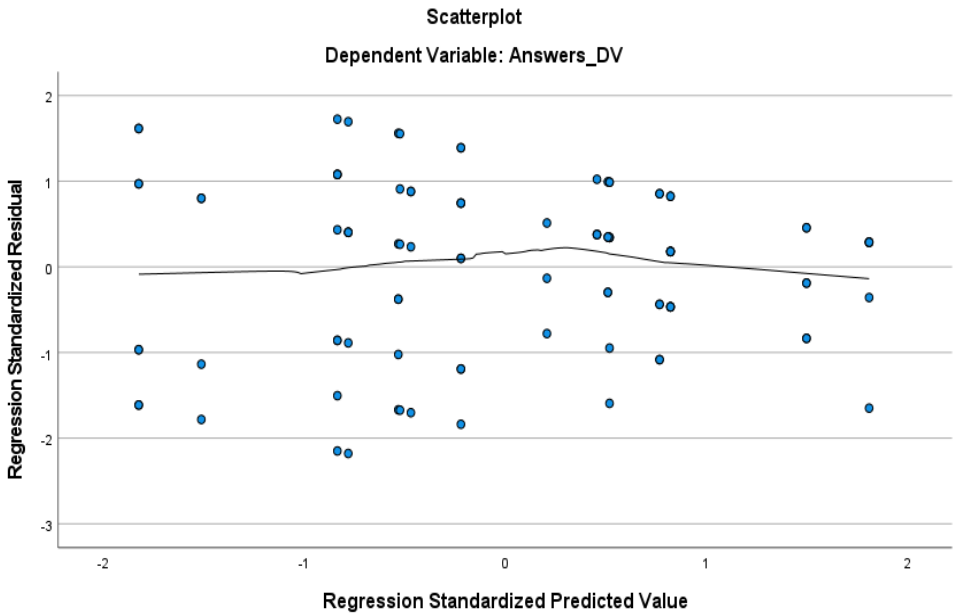
Field (2017) suggest that where the focus is on fitting a regression model, homoscedasticity matters, however, establishing barriers to positive risk-taking as a set regression model was not an objective of the factorial survey. Additionally, a Loess fit line was added to each scatterplot (Cohen, 2003), these indicate no substantial departure from homoscedasticity or linearity. Therefore, the assumption of homoscedasticity is met, albeit with, limitations which will be reported in the final analysis.

Residual scatterplots by group

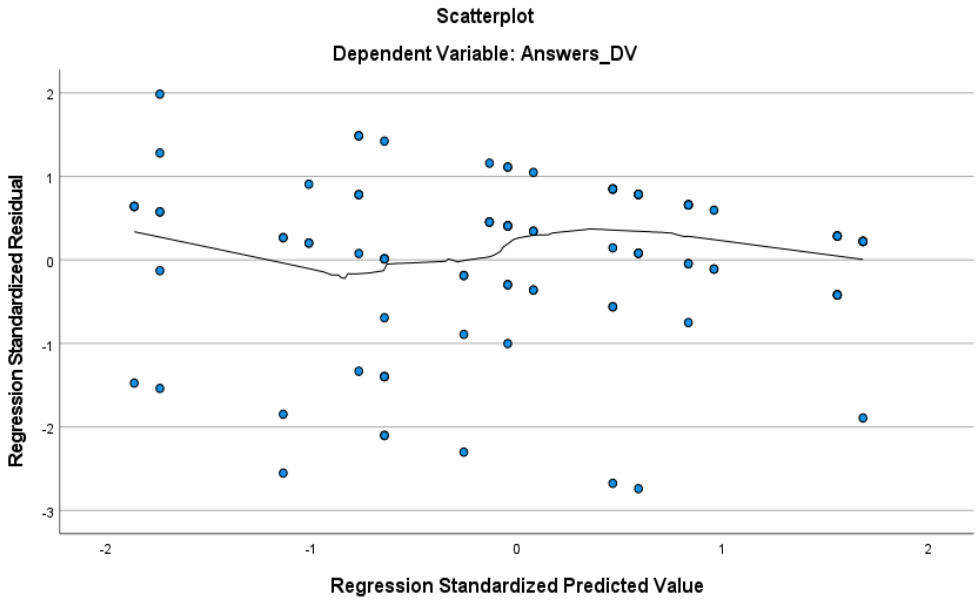
Novice



Semi-experts



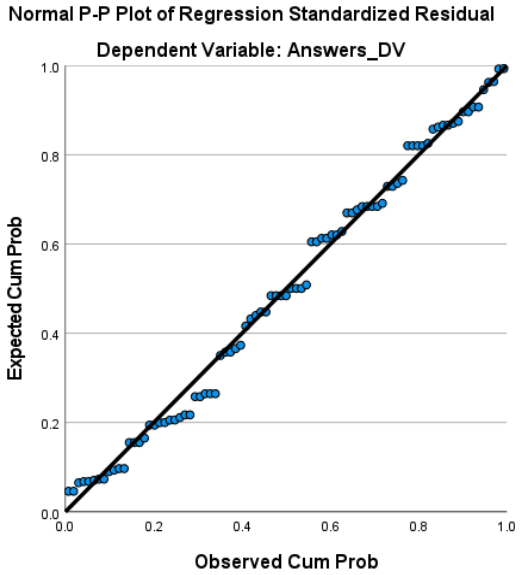
Experts



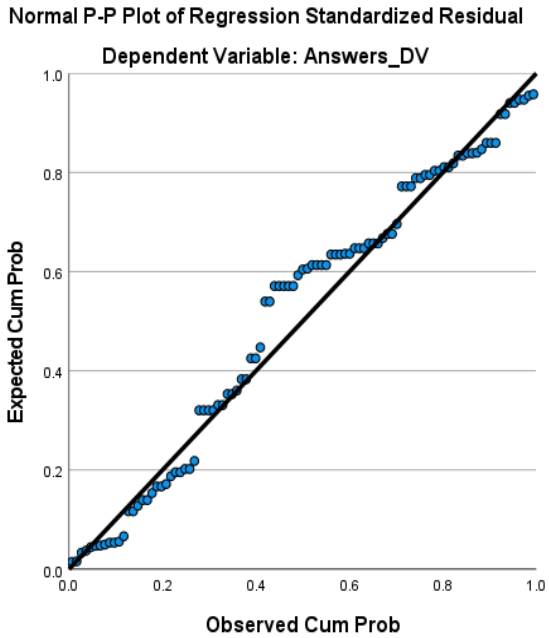
Residuals around the regression line are assumed to have a normal distribution in regression analysis. Although, normality violations do not lead to bias in estimates of the regression coefficients (Cohen, 2003). In this context, violations effect significance tests and confidence intervals especially where there are small samples. The factorial survey is focused on estimating regression coefficients (effect strength of the positive risk-taking barriers) and the sample has exceeded the G power analysis estimate (85 answered vignettes per group). In this context, it can be argued that normality of residuals for this study is not as important as some of the other assumptions. However, the residuals around the regression line follow a normal distribution, albeit the Semi-expert and especially the Expert groups residuals are more erratic, as seen on the 'Residuals distribution by group' figures. This finding will be a reported limitation in the final analysis.

Residual distribution by group

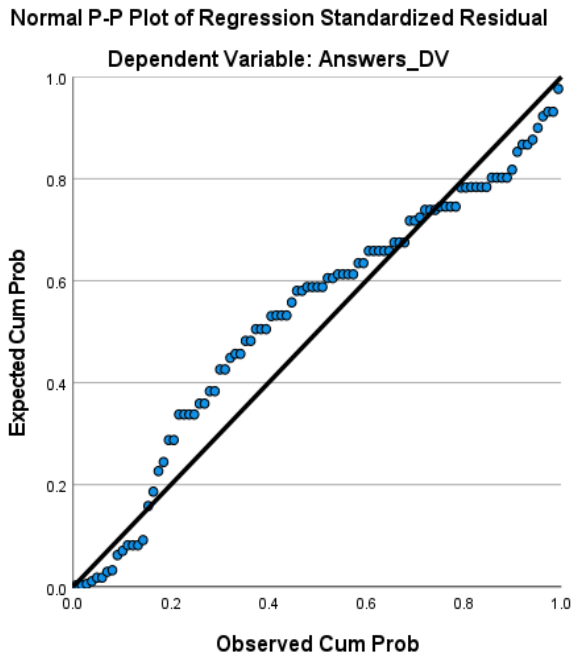
Novice



Semi-expert



Expert



In the context of meeting the independency assumption, residuals in the regression model should not be correlated, that being, they are independent to one another (Field, 2017). The residual scatterplots by group depict there are no extreme trends in the residuals, confirmed by the Loess line of fit. Likewise, and whilst there is more a positive trend (residuals above the line) the residuals follow the predicted values, albeit, with some notable deviation in the expert group. In relation to this assumption, an important consideration is how the respondents could be affected by the sampling method (Cohen, 2003). However, this study did not use the same individuals or groups repeatedly in its sampling method which have the capacity to cluster data and violate independency. Additionally, whilst a Durbin-Watson test is recommended to confirm independent residuals, the data sets in this study were not

ordered and therefore this test would be limited to give an accurate result (Field, 2017). In this context, the assumption of independency was met.

Influences and high leverage effects (outliers)

A residual is the difference between the observed value compared to the predicted value. There are examples in the data where the residuals do not completely follow the predicted values. The extent to which one or more of the residuals do not follow the predicted values has an impact on the regression model, however, the researcher may choose to include if this leverage is justified (Cohen, 2003). The visual assessment competed using the residual scatterplots and distributions by group confirm there is no single or set of problematic outliers. Additionally, a Cooks distance test was completed to identify any extreme data points in the groups data sets. Any values over 1 are likely to be significant outliers, which may place undue influence on the model, and should therefore be removed and your analysis rerun (Open University, nd). However, no values exceeding 1 were found in the groups data sets, confirming this assumption was met.

One-way ANOVA assumptions

The regression assumption testing also informed the One-way ANOVA test to determine whether there were any statistically significant differences between the means of the three groups (Novice, Semi-expert, Expert). There are three main

considerations, normality, independence, and homogeneity of variances (equal variances). The One-way ANOVA is robust to violations of normality (only needed with small sample sizes), and it can be used where there are differences in the size of the group sample (Field, 2017). In this context the factorial survey sample was sufficient to meet the normality requirement, that being, 87+ responses in each group. Additionally, independency had been established through visual assessment relating to the behaviour of the residuals and that the study design and sampling was unlikely to produce non-independency.

To meet the homogeneity of variances requirement, a between group Levene's test was conducted. The Levene's test null hypothesis provides that the variances in different groups are equal. Where a Levene's test is significant ($p<0.05$) then null hypothesis is rejected, that being, the variances are significantly different (Field, 2017).

A Levene's test was conducted with a Bonferroni correction (multiple comparison correction) no unequal variances were found indicated by the $p>.329$ finding seen on the 'One way ANOVA homogeneity of variances' table. Therefore, the null hypothesis was accepted, and the assumption was met.

One way ANOVA homogeneity of variances table

		Levene Statistic	df1	df2	Sig.
DV_Rating	Based on Mean	1.117	2	278	.329
	Based on Median	1.589	2	278	.206
	Based on Median and with adjusted df	1.589	2	268.851	.206
	Based on trimmed mean	1.280	2	278	.280