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

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Abstract
Introduction: Engaging with risk is a certain and unavoidable part of occupational therapy. Intermediate care services are mostly accessed by older people with complex needs, yet little is known in the literature about the extent, type and nature of risk involved in these services.

Method: A scoping review was systematically conducted to map the common areas of risk (risk domains) from an occupational therapy perspective. Thematic analysis was conducted in order to identify the risk characteristics related to the literature reviewed.

Results: 25 journal articles were identified and arranged into 10 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: (1) Risk awareness and identifying risk, (2) decision-making under risk and (3) improving safety.

Conclusion: Occupational therapists play a diverse role in migrating risk for older people which is not fully explored beyond addressing deficits in functional ability and hazardous environments. The process of how risk is controlled and reconciled with occupation and how positive risk-taking is facilitated are implicit and not directly addressed within the literature reviewed. The findings reveal gaps in knowledge and provide a foundation for further research.

Keywords
Occupational therapy, intermediate care, risk, safety

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Introduction
Intermediate care is a short term intervention that occurs between primary and secondary care and is mainly accessed by older adults with complex needs. It is internationally recognised as a healthcare model and is predominantly focused on maintaining a person’s independence in their home by avoiding unnecessary hospital admissions and premature residential care (NHS Benchmarking Network, 2017). Intermediate care can include inpatient facilities which offer rehabilitation and convalescence as a step to transitioning to home or other care arrangements. As part of its provision, it prevents and reduces risks, errors and harm as part of patient safety. Patient safety is a healthcare discipline that is concerned with services provided during the provision of healthcare (NHS, 2021). Post such provision requires the management of risk through an occupational therapy risk enablement plan so that a person can carry out and benefit from their activities safely (RCOT, 2017).

Risks are normally associated with harm and whether considered or unconsidered they are everywhere; at home, at work and in both activity and inactivity (Carson and Brain, 2008). Morgan (2004 p. 18) defines risk as ‘the likelihood of an event happening with potentially beneficial or harmful outcomes for self and others’, thus emphasising both positive and negative aspects of risk-taking. In occupational therapy, negotiating the safest approach to risk-taking is an intrinsic part of a service user’s progress (RCOT, 2017).

Determining the nature of a risk and the opportunity it may or may not present is a cognitive process which includes subjective viewpoints (Gallagher, 2013; Breakwell, 2007). 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). Clinical and professional reasoning involves making judgements on risk-prone situations and occupational therapists use informal theories and tacit knowledge in their decision-making (Carrier et al., 2010). Heuristics can provide a mental shortcut to problem-solving, thereby reducing cognitive burden, but it can also lead to unhelpful bias like risk avoidance.
which can encroach on the ethical principles of autonomy, beneficence, non-maleficence and justice (Carson and Brain, 2008; Schell and Schell, 2008). There is a duty of care to support clients to take measured risks in occupational therapy (RCOT, 2017), this is sometimes clouded by fears of accountability and blame (Morgan, 2004). Carson and Brain (2008) contends that failing to support risk-taking can lead to serious consequences for those receiving care and avoiding risk-taking where there is a duty of care is not a guaranteed way to avoiding a harmful outcome or liability.

Effective risk management is achieved as a result of, and attention to, its preceding factors, which commonly include awareness, identification, assessment, action, communication and review to ensure harmful risk is minimised and positive therapeutic benefits are enhanced (Gallagher, 2013; Haxby et al., 2011; RCOT, 2017). The risk management process becomes particularly challenging when those with complex needs transition between higher dependency care to lower dependency care arrangements or where higher dependency care can be avoided in favour of more suitable support (National Institute for Health and Care Excellence, 2017). Additionally, the therapeutic use of risk is subject to client agreement and those that have mental capacity can choose their level of compliance or refuse such interventions which mitigate risk. Engaging in activity that presents a significant risk of harm where risk cannot be reduced to a reasonable level also presents complexity for occupational therapists. As such, refusing to support such an activity can be appropriate providing a person is made aware of all the risks and the activity is made as safe as possible. Making decisions like these is also subject to determining a client’s mental capacity and where there is a belief that capacity is lacking, risk-taking should be approached on a decision per decision basis and proportional to the level of understanding of the service user (RCOT, 2017). Such challenges are commonplace in intermediate care delivery.

In the United Kingdom, intermediate care and reablement provision are divided between home-based, reablement, bed-based and crisis-response services (National Institute for Health and Care Excellence, 2017). These services are accessed mostly by older people aged between 79 and 90 years (NHS Benchmarking Network, 2017). Demand for intermediate care is increasing as the 85+ age group is the UK’s fastest growing population and is set to double to 3.2 million by mid-2041 and treble by 2066 (NHS Benchmarking Network, 2017; ONS, 2018). As age increases, so does the likelihood of incurable long-term illness such as diabetes, cardiovascular and chronic respiratory disease (Wright et al., 2017) and ill health arising from multi-morbidity, frailty, dementia, malnutrition, falls and hip fractures, mental health problems, sensory loss, loneliness and social isolation (Age UK, 2019). These considerations together with a multitude of extrinsic factors (e.g. resource availability) require complex decision-making under risk to enable safe risk-taking. In intermediate care, positive risk-taking has become a prominent risk contingency principle. Positive risk-taking is ‘...balancing the positive benefits gained from taking risks against the negative effects of attempting to avoid risk altogether’ (National Institute for Health and Care Excellence, 2017, p. 17).

Health and wellbeing involves more than just the absence of disease. Occupation is a contributing factor to wellness and is fundamental to how people realise aspirations, satisfy needs and cope with the environment (Wilcock, 1993). Mcintyre and Atwal (2005) contend that occupational therapists evaluate and assess multiple pathologies in old age together with social, psychological, spiritual and cultural factors, which present profession-specific challenges. Risks in intermediate care are complex and heterogeneous and the literature from an occupational therapy standpoint is limited. The purpose of this scoping review is to identify studies conducted in intermediate care settings which relate to occupational therapy risk management in order to pool the available research and map key concepts. This scoping review aims to

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

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 and O’malley, 2005). The framework, in accordance with the recommendations by Arksey and O’malley (2005), was implemented using the guidance of the Joanna Briggs Institute of Applied Health Sciences and McMaster University, manual for scoping reviews. This framework and guidance assisted in identifying the research question, identifying relevant literature, study selection, charting the data, and collating, summarising and reporting results.

Identifying the research question

The research question was developed by preliminary database searching and the initial reading of relevant literature. The research question was constructed using a collaborative process between the authors and identified as: What are the common areas of risk and their characteristics found in intermediate care from an occupational therapy perspective?

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 between the authors 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. Searches were not restricted by date, publication type or by non-peer review and non-English language studies were included. A search string was created using the divisions of occupational therapy, intermediate care services and risk and the variations of criteria therein (see Table 1). Boolean operators, truncation, wild
card and proximity features were adjusted when necessary for each search and MeSH indexing was either not available or limited and was not used.

**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 an aspect of risk management. These perspectives included clinical and professional reasoning/decision-making, opinion, perceptions and reflections. The National Institute for Health and Care Excellence (2017) core guidelines, the National Audit of Intermediate Care (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; DOH, 2009; RCOT, 2017). A decision tree (Appendix 1) was developed for the purposes of applying criterion. Duplicate EndNote files were created for two authors to screen the titles and abstracts independently. The results from each of the reviewers’ screening were combined into one EndNote file and the first author completed a full text review of each study. Meetings between the reviewing authors were held to resolve screening discrepancies; three areas of exclusion were added, as shown in Figure 1. The studies that were subject to screening discrepancies and/or required further review for inclusion or exclusion were screened by full text by the authors independently before agreeing on exclusion. 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 that is, prison, temporary or residential accommodation, as per Sec. 1.3.2 of the National Institute for Health and Care Excellence (2017) intermediate care core principles.

**Assessment of methodological quality**

An assessment of the methodological quality of included studies was undertaken, in accordance with the recommendation from Unsworth (2020) for occupational therapy scoping reviews, as shown on Appendix 2. 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 first author. Eight studies (32%) were selected randomly and screened independently by the second author to confirm the accuracy of their appraisal. Appraisal discrepancies were discussed during a team meeting between authors, whilst there was a high level of agreement in most areas the first author 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 qualitative and quantitative 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 are summarised in text only.

**Charting the data**

Included studies were organised in Microsoft Excel and the data were extracted and charted as shown in Table 2 (Joanna, 2020). The first author completed and organised the data in the following categories:

- Risk domain;
- Author/year;
- Methodology/publication description;
- Study purpose;
- Location/sample;
- Key findings and
- Limitations (reported).

**Collating, summarising and reporting results**

Content analysis of all eligible studies was conducted in two stages by the first author: a descriptive analytical approach to

### Table 1. Search terms.

| No. of terms used | Search techniques |
|-------------------|-------------------|
| Occupational therapy (n=1) | Occupational therapeut* 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-habilitation OR home OR bed OR rehab OR comm* OR resto* OR integral OR crisis OR rapid OR satellite W2 team OR in-reach OR in-reach OR safe W2 haven OR mobile W2 rehab OR recuperat* OR transitional W2 care OR three W2 tier OR emergency W3 team OR emergency W3 teams OR evercare OR discharge* |

W2 and W3 = word proximity to adjacent word.
establish frequencies followed by thematic analysis to identify themes and patterns systematically (Braun and 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 first author 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 achieved by a collaborative process between all authors before deciding upon the risk characteristics to be reported (Braun and Clarke, 2006).

**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. Three studies were unavailable resulting in 25 studies being included in this review. The search process is shown in Figure 1. All included studies were published between 2000 and 2019 and ten (60%) were published within the last 10 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 Delphi study.

**Assessment of methodological quality**

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 interview and focus group. Four main areas presented a quality concern: those were the sampling...
The database searches identified 2878 hits. After duplicates were removed, 1374 were eligible for full text review. Of these, 1184 were excluded, leaving 174 for data entry and analysis. Further 1820 were excluded which left a full text review sample of 94 for thematic analysis.

The qualitative studies reviewed were diverse and used a variety of methods to collect data. The prominent data collection methods were semi-structured interviews and focus groups. Four studies were unable to be included due to their study designs, including grounded theory, phenomenology and case studies, and drawn from a range of countries, including Australia, the United States, and the United Kingdom. The use of primary and secondary data analysis is common, which presents challenges in assessing the quality of the studies reviewed. The scoping review does not provide an assessment of the quality of the studies reviewed. Information not identified, as outcomes are not systematically included in electronic databases. Searches could have covered a longer period with more (6) trials listed.

Table 2. Study summary.

| Risk domain | Methodology/publication description | Study purpose | Location/sample | Key findings | Method of assessment | Limitations (reported) |
|-------------|------------------------------------|--------------|----------------|-------------|---------------------|-----------------------|
| Activities of daily living | Quota-sampled survey (NHS and Social Services in Greater London) | 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) | Methods of assessment used: | Referral to a home without water (n=15) and face-to-face client interviews were the most used assessments (n=36). | Generalizing the results - sample was limited to Greater London. The hospitalization status of the participants cannot be assured. Debriefs one organization. Reliability of the questionnaire (scale modified for the study). |
| Activities of daily living | Delphi study | To synthesize current knowledge about community occupational therapy (CT) in determining interventions important to the ability to live at home. | Australia | | | |
| Discharge | 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 | | More reported |
Table 2. Continued.

| Risk domain | Methodology/publication description | Study purpose | Location/sample | Key finding | Limitations (reported) |
|-------------|-------------------------------------|---------------|----------------|-------------|------------------------|
| Discharge   | Qualitative (semi-structured interviews and focus group) Canadian Journal of Occupational Therapy<br>Researchers, 2017 | The study explored occupational therapists’ 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 and specialized rehabilitation) Occupational therapists (n=10) | 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. | The author’s biases may have influenced interpretation of the data. |
| Discharge   | Qualitative (focus group and interviews) Scandinavian Journal of Caring Science<br>Researchers, 2016 | To investigate the perceptions of therapists and clients on common practice home assessments and interventions prior and post discharge from a geriatric inpatient clinic. | Sweden (geriatric inpatient ward) Occupational therapists (n=9) Participants (n=23) | Three themes were identified: 1) Therapists support client-centred practice and included family as caregivers and proxy decision makers. 2) Client-centred practice became difficult when family unwilling to accept risk. 3) Cognitive impairment and professional driven style of decision-making. | Client-centred practice can involve blending client-driven and regulated styles of decision-making. |
| Discharge   | Qualitative (semi-structured interviews) Journal of Occupational Therapy<br>Researchers, 2018 | To determine the perceptions of occupational therapists on issues related to client-centred discharge decision-making. | Canada (acute and geriatric and specialized rehabilitation) Occupational therapists (n=10) | Three themes were identified: 1) Therapists support client-centred practice and included family as the client’s caregivers. 2) Client-centred practice became difficult when family unwilling to accept risk. 3) Therapists struggled with risk situations where these decisions had to be made with the client to be client-centred practice. | Client-centred practice can involve blending client-driven and professional driven styles of decision-making. |
| Discharge   | Qualitative (semi-structured interviews) Scandinavian Journal of Caring Science<br>Researchers, 2016 | To investigate the perceptions of therapists and clients on common practice home assessments and interventions prior and post discharge from a geriatric inpatient clinic. | Sweden (geriatric inpatient ward) Occupational therapists (n=9) Participants (n=23) | Premise that discharge decision-making processes. | Client-centred practice can involve blending client-driven and professional driven styles of decision-making. |

Discharge: Moats, 2007 Qualitative (semi-structured interviews) Canadian Journal of Occupational Therapy<br>Researchers, 2017

Discharge: Nygaard et al., 2004 Qualitative (focus group and interviews) Scandinavian Journal of Caring Science<br>Researchers, 2016

Discharge: Pearson, 2018 Qualitative (semi-structured interviews) Journal of Occupational Therapy<br>Researchers, 2018

Discharge: Nygaard et al., 2004 Qualitative (focus group and interviews) Scandinavian Journal of Caring Science<br>Researchers, 2016

Discharge: Pearson, 2018 Qualitative (semi-structured interviews) Journal of Occupational Therapy<br>Researchers, 2018

Discharge: Moats, 2007 Qualitative (semi-structured interviews) Canadian Journal of Occupational Therapy<br>Researchers, 2017

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Discharge: Nygaard et al., 2004 Qualitative (focus group and interviews) Scandinavian Journal of Caring Science<br>Researchers, 2016

Discharge: Pearson, 2018 Qualitative (semi-structured interviews) Journal of Occupational Therapy<br>Researchers, 2018

Discharge: Moats, 2007 Qualitative (semi-structured interviews) Canadian Journal of Occupational Therapy<br>Researchers, 2017

Discharge: Nygaard et al., 2004 Qualitative (focus group and interviews) Scandinavian Journal of Caring Science<br>Researchers, 2016

Discharge: Pearson, 2018 Qualitative (semi-structured interviews) Journal of Occupational Therapy<br>Researchers, 2018
Table 2. Continued.

| Risk domain | Author(s), year | Methodology/publication description | Study purpose | Location/sample | Key findings | Limitations (reported) |
|-------------|-----------------|--------------------------------------|--------------|----------------|-------------|------------------------|
| Discharge   | Davis Aisling and McClure, 2019 | Quantitative (survey) | 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 therapists (n=28) | Results from the quantitative section include: 14 visits and 0.8% completed 15+ visits per month. 50% of participants reported taking between 1 and 1½ to complete a home visit. 3% took less than 30 mins to write reports, 41% of the participants reported they take between 1 hr and 1½ to complete reports. They identified the opportunity to assess patients within their own, familiar environment. The ability to identify potential difficulties, reduce fall risk and improve safety was also mentioned by several participants. Most participants believed working as a significant risk during a discharge home visit. The risk of unknown social factors included segregation from family members and diverging service provision. Beds, sinks, pets, poor lighting and focus in attentional belief in household and services. Patient safety issues included falls, or medical emergency as potential risks during a home visit. Most participants cited lone working as a significant factor. | Predetermined questions may have inhibited the insights into frailty. Small sample and disproportionate representation of therapists. |
| Discharge   | Simning et al., 2018 | Quantitative (longitudinal study) | 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, considering the sociodemographic factors and physical, mental and social health characteristics. | United States (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 years. 1141 patient encounters (mean age 78.1 years) were included. Patients were interviewed at 3 weeks upon admission, every 2 weeks, every 4 weeks during their stay and 1 week, 1 month and 3 months post-SNF discharge. The independent variables and outcome measures were used to construct a model to identify who would successfully transition to home. The predictions of the occupational and physiotherapists were associated with discharge outcomes. The predictions of the medical providers and social workers were not associated with the discharge outcomes. | Study was not designed to test the predictive capabilities of the participants. The primary objective 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, considering the sociodemographic factors and physical, mental and social health characteristics. The study was conducted from March 2016 to November 2017 with English-speaking patients aged 65 years. The independent variables and outcome measures were used to construct a model to identify who would successfully transition to home. The predictions of the occupational and physiotherapists were associated with discharge outcomes. The predictions of the medical providers and social workers were not associated with the discharge outcomes. The model was not designed to test the predictive capabilities of the participants. |
| Risk domain | Authors, year | Methodology/publication description | Study purpose | Location/sample | Key findings | Limitations/Impacted |
|-------------|--------------|-------------------------------------|---------------|----------------|-------------|-------------------|
| Falls       | Buri et al., 2000 | Qualitative (Phase 1: semi-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 out, if so, what types of perceptual dysfunctions pose the greatest risk. | UK (four residential homes) | Phase 1: Exploration (Occupational Therapy (n=20)) Phase 2: Researcher (n=1) Residents observed (n=10) | Phase 2: Three categories emerged as having important considerations to determining perceptual dysfunctions contributing to the risk of falls in the elderly with cognitive impairment: \- Risk domain \- Author(s), year \- Methodology/publication description \- Study purpose \- Location/sample \- Key findings \- Limitations/Impacted | Small sample not generalisable. Validity (findings) may have been affected by the subjective interpretations of the researcher. Observation may have affected the respondents’ behaviour. |
| Falls       | Ruchinskas et al., 2003 | Quantitative (a two-part survey. Part 1: A self-reporting non-used questionnaire. Part 2: A self-reporting used questionnaire) American Journal of Physical Medicine & Rehabilitation | To examine the capacity of occupational therapy therapists to identify risk factors for falls. | US (three academic medical rehabilitation centres) | Occupational Therapy (n=165) Physical Therapy (n=141) Rehabilitation Psychology (n=105) | Occupational therapy therapists identified advancing age as a risk factor for falls. Physical therapists identified history of falls as a risk factor for falls. | The sampling methods in this sample produced unequal representation between the disciplines. This may yield criticism from a methodological perspective and interpretation of the results. |
| Falls       | Ruchinskas, 2014 | Qualitative (longitudinal cohort study) American Journal of Occupational Therapy | To examine the ability of physical and occupational therapists engaged in rehabilitation to predict falls in the elderly within a 3-month period after discharge. | US (rehabilitation unit) 36 months fell duration. Elderly patients (n=30) aged 60+ years identified during 31 period. Controlled for (12% with deep post-discharge. Physical Therapy (n=30) Occupational Therapy (n=30) | Occupational therapists identified 13% and physical therapists predicted 20% as a risk factor for falls. Degree of weakness, safety awareness and balance were most cited as salient factors in determining who was at high or low risk of future falls. | Large sample not presented. Validity (findings) may have been affected by the subjective interpretations of the researcher. Observation may have affected the respondents’ behaviour. | (continued)
Table 2. Continued.

| Risk domain | Methodology/publication description | Study purpose | Location/sample | Key findings | Limitations (reported) |
|-------------|------------------------------------|---------------|----------------|--------------|------------------------|
| Falls       | Systematic review | To review the current falls-prevention literature for community-dwelling older adults from an occupational therapy perspective, to highlight important contribution occupational therapy could make to this functional problem. | Canada | The literature identifies numerous risk factors involved for this population which can be categorized as intrinsic (personal) and/or extrinsic (environmental). | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | 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). | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | The most important pitfall was to reach community-dwelling elderly that are not in touch with health professionals (median = 5 [very important], IQD = 1). | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | 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%). | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | Structural follow-up is often lacking. Physiotherapist was considered key in offering these preventive programs and follow-up. | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | 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%). | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | The panel was asked to indicate which health professionals should particularly be involved in detection of fall risk. | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | The most frequent hazards were identified as internal steps/stairs, seating, bathroom, bath and external steps/stairs. | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | According to the panel, health professionals that should particularly be involved in offering these preventive programs are the general practitioner (n = 51/72; 71%) and the informal caregiver (n = 33/72; 46%). | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | 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. | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | The panel indicated a combination of formal health education, healthcare counseling and removal of financial barriers would stimulate the participation of the elderly in falls prevention programs. | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | Few items (8%) 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 instruments (e.g. ability to climb stairs). | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | The WeHSA-J showed adequate inter-rater reliability similar to the original WeHSA. Good or fair to good internal consistency, 0.6 items (97%) in the original version and 0.9 (82%) in the Japanese version. | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | Of elderly people aged 76.2 ± 7.1 years (n = 28 males (84%) and 31 females (16%)) participated in this reliability study. | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | The most frequent hazards were identified as internal steps/stairs, seating, bathroom, bath and external stairs. | No reported |
| Falls       | Delphi study (two rounds) | 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 why; c) how elderly can be stimulated to participate in falls-prevention programs and d) how to finance falls prevention. | Netherlands | The reasons for conducting a WeHSA-J on each participant were: a home visit for 22 participants (44%), consultation on fall prevention for 17 (34%) and community-based occupational therapy services for 11 (22%). | No reported |

(continued)
Table 2. Continued.

| Risk domain | Author(s) | Methodology/publication description | Study purpose | Local or sample | Key findings | Limitations (reported) |
|-------------|-----------|-------------------------------------|--------------|----------------|-------------|------------------------|
| Falls       | Pighills et al., 2019 | Mixed methods (medical chart audit, survey, and focus groups) | Australian Occupational Therapy | A convenience sample was used to audit the medical charts. These were the medical charts of patients who visited a rural health service, from an occupational therapy perspective. | Twenty-four therapists were identified and 12 completed the survey (58.33%). Participants were also asked to complete a falls prevention questionnaire, and the results were categorized into themes, knowledge, attitudes, confidence, and experience. Knowledge: | No convenience sample was used to audit the medical charts. These were the medical charts of patients who visited a rural health service, from an occupational therapy perspective. |}

| Falls       | Xu et al., 2019 | Qualitative (focus groups) | Disability and rehabilitation | The aim of this study was to identify the perceptions of disability therapists on falls prevention programmes with community-dwelling stroke survivors in Singapore. | Limitations of existing falls prevention programmes for stroke clients. | No qualitative sample was used to identify the perceptions of disability therapists on falls prevention programmes with community-dwelling stroke survivors in Singapore. |}

| Language barriers | Squires et al., 2019 | Qualitative secondary analysis of International Journal of Nursing Studies | Exploration of the implications of national and local language barriers for home health care in the USA. | Exploration of the implications of national and local language barriers for home health care in the USA. | This study is qualitative and descriptive, and the findings cannot be generalised across similar practice settings. | No qualitative sample was used to explore the implications of national and local language barriers for home health care in the USA. |}

| Language barriers | Squires et al., 2019 | Qualitative secondary analysis of International Journal of Nursing Studies | Exploration of the implications of national and local language barriers for home health care in the USA. | Exploration of the implications of national and local language barriers for home health care in the USA. | This study is qualitative and descriptive, and the findings cannot be generalised across similar practice settings. | No qualitative sample was used to explore the implications of national and local language barriers for home health care in the USA. |
### Table 2. Continued.

| Risk domain | Author(s), year | Methodology/publication description | Study purpose | Location/sample | Key findings | Limitations (expected) |
|-------------|-----------------|--------------------------------------|---------------|-----------------|--------------|------------------------|
| 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 whether there are specific barriers that may prevent activity detecting and managing loneliness. | UK, (n=15) Community nurses (n=5) Physiotherapists (n=4) Occupational therapists (n=1) | Findings presented at 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 unique issue for intermediate care team clients, 
- Complex and changing relationship between physical health, mental health, and loneliness, 
- Identifying and enacting loneliness are professional practices but managing it is out. 
- Barriers to referring loneliness to other services. | The views represented in this study are likely to be from professionals with an interest in loneliness in their clients. |
| Nutrition care | Philp et al., 2015 | 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 healthcare professionals and home care workers. | UK, (n=9) Healthcare professionals (n=5) Home care workers (n=4) Social care (n=1) General practitioner (n=1) Dietician (n=1) | Challenges in implementing fall prevention program. The qualitative data elicited from the four focus groups generated three main themes and sub-themes: 
- Limited understanding of falls prevention among the caregivers, 
- Challenges in implementing fall prevention program, 
- Additional key interventions/elements needed in the SOAS programme. | Generalizing the findings. The sample was representative of healthcare roles in the intermediate care; it was small and was from a single intermediate care trust. |
Table 2. Continued.

| Risk domain | Author(s), year | Methodology/publication description | Study purpose | Location/sample | Key findings | Limitations (reported) |
|-------------|----------------|-------------------------------------|---------------|----------------|-------------|------------------------|
| Patient handling | Darragh et al., 2013 | Qualitative (focus groups) | 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) | Three major themes were identified which related to the question of how the equipment is used in and affects rehabilitation: choice, potential and safety. | 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. |
| Patient handling | Scheirton et al., 2003 | Qualitative (focus groups) | To examine occupational therapists’ responses to practice errors in physical rehabilitation settings. | US (four physical rehabilitation centres) | Five themes were generated: (1) Concept of practice error: It is against our standards; (2) perceived causes of practice error: Not just an individual matter; (3) emotional response: ‘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 might have affected therapists’ points of view in the focus groups. |
| Practice errors | Mu et al., 2011 | Qualitative (focus groups) | To investigate occupational therapists’ responses to practice errors used in physical rehabilitation and geriatrics. | US (physical rehabilitation or geriatrics) | Four themes were emergent from the data: (1) Strengthen simulation and mentoring for new therapists; (2) Increase competency through performance competency checks; (3) Enforce existing or establish new safety policies and procedures; (4) Monitor for the prevention of and further systemic change. | Participants varied greatly in years of practice experience and age of setting. Social desirability might have affected participants’ points of view in their efforts to minimize such impact. |
| Risk domain | Author(s), year | Methodology/publication description | Study purpose | Location/sample | Key findings | Limitations (reported) |
|-------------|-----------------|-------------------------------------|---------------|----------------|-------------|----------------------|
| Practice errors | Corrado et al., 2014 | Quantitative (survey) | To explore the characteristics of the clinical risk in rehabilitation: To learn more about its extent, its components, and its consequences for the user. | Italy (49 private rehabilitation centres) | Out of 15673 errors, 75.17% occurred in outpatient 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. Most frequent occurring errors (38.38%) were linked to errors concerning technical and professional aspects, such as errors in dose adjustment, treatment planning, and assessment errors. | Small study in one geographical area, the results are limited in their ability to be generalised to other occupational therapists. |
| Pressure care | Rose and Melicher, 2010 | Qualitative (grounded theory and semi-structured interviews) | The purpose of the study was to investigate the perceptions of occupational therapists about their role within pressure care and the influence on clinical decisions in this area. | Australia (n=9) Occupational therapists (n=7) and community health (n=2) and rehabilitation (n=1) | The occupational therapy role in pressure care is shaped largely by context, role traditions, knowledge and experience. A lack of pressure care education was identified. Clearer guidance on role within pressure care is required for undergraduate educators and occupational therapists managers in the education of students and practicing therapists. | Only study in one geographical area, the results are limited in their ability to be generalised to other occupational therapists. |
methods used, the role of researcher, decision trial auditability and trustworthiness. The sampling methods 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 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. Additionally, the rationale for using statistical testing was rarely described and most studies reported limitations to the generalisability of their findings.

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 Appendix 2.

**Risk domains**

With regard to the Research Aims 1 and 2, the risk domain frequencies are 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 2. 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.

Examination of the nature and scope (Aim 2) of the risk domains was conducted to identify the research methodologies, practice settings and the focus of the research within each risk domain, as presented on Tables 3–5. 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 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.

**Risk characteristics**

To address Aims 2 and 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 and (3) Improving safety.

**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 program 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 and 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
studies can be seen in Appendix 2. Quality assessment summary of the quantitative and qualitative study used systematic methods and these studies ranged from one out of the three literature reviews in this study or employed a screening process to determine whether liability and some studies omitted whether they used a pilot sample was often not described in detail. Outcome measures bias was not reported, groups were not equal in size and the methods used in data analysis. None of the studies were not reported in terms of their empirical validity and re-

Figure 2. Risk domain frequencies.

Table 3. 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 (including management of conditions) | –     | 1         | 1               | –                         | –       | –                | –          | –              | –              | 1           |
| Perceptions (including 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 4. 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 (including outreach or other health services) | 1     | –         | –               | –                         | –       | –                | –          | –              | –              | –           |

Note: includes multiple practice settings within a single study.
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 and Mc Clure (2011) investigated by Scheirton et al. (2003), Mu et al. (2011) and Mole et al. (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.

### 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 and 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 risk, Kinn and 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 and Kamimura (2018), where adapting fall assessment and prevention programmes were

### Table 5. 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     | —           | 1     | 1         | —               | 1                         | —       | —                 | —          | —               | —               | —            |
| (including scoping review) | — | — | — | — | — | — | — | — | — | — | — |
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, Simming 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 and Hobson, 2003). Moats and 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 and 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.

**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. Olj 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 healthcare costs, Xu et al. (2019) contend that group-based falls-prevention interventions for stroke survivors such as ‘Stepping On’ could improve cost effectiveness. Hasegawa and Kanimura (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 and 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 and 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 and 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.

Discussion

The purpose of this scoping review was to identify the common areas of risk and their characteristics in intermediate care from an occupational therapy perspective. 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 2). 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 3), and ‘Rehabilitation’ settings followed by ‘Home’ and ‘Community’ were the most common research locations (see Table 4). The majority of research reviewed was qualitative in nature or used descriptive quantitative survey designs (see Table 5). 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 was 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.

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 across 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 and 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 Aisling and Mc Clure (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 and 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 catégorised 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 of 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 and 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). 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 enabling 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) recommends 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.

**Implications**

It was expected that there would be a paucity of research relating to risk management, including positive risk-taking, in intermediate care from an occupational therapy perspective which is why a scoping review with a broader focus was conducted. Possible reasons for this lack of information may reside in the diverse nature and approaches used in risk management and how occupational therapists use clinical and professional reasoning, informal theories and tacit knowledge to problem solve risk-prone situations. These techniques may be difficult to communicate and therefore difficult to investigate in research. However, examples of best practice methods including overcoming barriers to employing such risk management strategies that support policy and guidance have not been identified. This knowledge gap presents implications to occupational therapy student and clinical practice education. It is important to develop training programmes that are evidence based and are reflective of occupational therapy expertise in the delivery of intermediate care. This challenges future research to investigate the explicit methods of risk management and how positive risk-taking is facilitated in intermediate care by occupational therapists involved in its delivery and who are experts in their field.

**Strengths and limitations**

This scoping review has been conducted using a systematic and rigorous process and has benefitted from the experience of a multi-professional research team and 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. Three studies were not available.

**Conclusion**

This scoping review identified 10 risk domains and three areas of risk characteristics which are central to occupational therapy practice in intermediate care.

Occupational therapists predominantly seek to mitigate risk relating to a client’s symptoms, mobility and function within their environment but are aware of risk related to themselves, suboptimal systems and processes within organisations. Organisational policies and practices together with high demands for intermediate care services are not always congruent with mitigating risk relating to psychosocial phenomena such as loneliness. This can cause conflict between those providing care and service providers.

There are many examples of the implicit management of risk in relation to the positive effect of occupational therapy interventions in the ‘Decision-making under risk’ and ‘Improving safety’ risk characteristics. However, this review has found no explicit information relating to key risk management strategies including how the likelihood and severity of risk is assessed and how positive risk-taking is facilitated. Likewise, there is a lack of occupational focus and therefore a gap in knowledge as to how risk is embraced and reconciled with the value and need for occupation for those accessing intermediate care services. Successful positive risk-taking is dependent on effective risk management skills. Future research must focus on all aspects of risk management and how positive risk-taking is factored into occupational therapy interventions in relation to older adult intermediate care in support of the current policy and guidance.

**Key findings**

- 10 risk domains were identified, ‘Falls’ being the most common.
- Three prominent risk characteristics were reported.
- Managing occupation in relation to risk-taking strategies was implicit within the literature reviewed.
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BestPractice in Managing Risk.

What this study has added
This study has mapped the current literature relating risk in intermediate care from an occupational therapy perspective, providing insight into risk within the service to further knowledge and research direction.

Research in Practice – Making Sense of Data

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Appendix 1. Screening decision tree.

Does the information originate from a post-registered Occupational Therapist?  
No: Exclude

Yes: Is the practice setting within the remit (NICE 1.3.2 core principle) of intermediate care?  
No: Exclude

Yes: Does the intermediate care description include the terminology?  
- crisis response, bed based, reablement, home based, rapid response teams based in accident and emergency departments, rapid assessment and treatment (RATS), homework bound, discharge or enablement discharge service, community outreach service, community assessment rehabilitation teams, satellite team - inreach work, mobile rehabilitation team, recuperative care, safe haven beds, transitional care beds, three tier model, Evercare model and/or Vulnerable peoples project.

Yes: Is there a threat to safety, danger, hazard and/or an identified vulnerability, threat to an occupational role, uncertainty in functional ability and/or exposure to a harmful risk involving a patient?  
No: Exclude

Yes: Are risks being identified, assessed, managed or reflected upon?  
No: Exclude

Yes: Is there information relating to perceptions, opinions, risk mitigation, clinical reasoning and/or clinical decision-making?  
No: Exclude

Include:
Appendix 2. A quality assessment summary of the quantitative and qualitative 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? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

### Qualitative Studies

| Quality assessment questions | Meats, 2007 | Nygård et al., 2004 | Buri et al., 2000 | Xu et al., 2019 | SQUIRES et al., 2019 | Chana et al., 2019 | Mole et al., 2019 | Darragh et al., 2003 | 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? | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

(continued)
Continued.

| Quality assessment questions | Moats, 2007 | Nygård et al., 2004 | Buri et al., 2000 | Xu et al., 2019 | Squires et al., 2016 | Chana et al., 2019 | Mole et al., 2019 | Darragh et al., 2013 | Scheirton et al., 2003 | Mu et al., 2011 | Rose and MacKenzie, 2010 |
|-----------------------------|-------------|---------------------|-------------------|-----------------|---------------------|-------------------|-------------------|-------------------|----------------------|-----------------|-----------------------|
| 9. Was there sufficient information to understand the data collection? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10. Procedural rigour was used in data collection strategies? | ✓ | ✓ | ! | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11. Data analyses were inductive and appropriate? | ✓ | ✓ | ✓ | ✓ | ✓ | ! | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12. Findings were consistent with and reflective of data? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13. Decision trail developed? | × | × | × | × | × | × | × | × | × | × | × |
| 14. For auditing, is the process of analysing the data 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 and future OT practice/research? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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