Patient perceived readiness for hospital discharge

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PATIENT PERCEIVED READINESS FOR HOSPITAL DISCHARGE

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Abstract

Ensuring older adults feel prepared to discharge from rehabilitation to home is imperative for successful discharge and to reduce the risk of unplanned readmissions. Older adults account for the majority of hospital and subsequent rehabilitation admissions. With the average life expectancy increasing and the population of older adults aged 60 and over increasing it is likely that the number of older adults living in the community will continue to grow and the need for rehabilitation will increase. It is important to ensure that when older adults undergoing rehabilitation are ready for discharge back home, the transition from hospital to home is successful and preventable readmissions are avoided.

The discharge planning process for older adults in rehabilitation is often complex and multifactorial. Discrepancies in perceptions of readiness for discharge have been shown between the rehabilitation team and patients. Involving the patient in the discharge planning process from an early stage may be beneficial in terms of successful discharge and minimising the risk of unplanned readmission. There is much to consider from a Physiotherapists' perspective when planning complex discharge for older adults including; physical function, coping, expected support, confidence, mood, environment and social supports. This may present a challenge for physiotherapists who have little or no experience with complex planning and clinical reasoning. This program of research was designed to explore patient perceptions of readiness for discharge and other factors involved in discharge including physical function, balance, mobility, balance confidence and depression risk. Additionally, this program of research aimed to increase understanding of patient and physiotherapists' experiences with rehabilitation discharge and discharge planning.

Five studies were undertaken in this thesis, two quantitative and three qualitative. Study 1 was a quantitative study and explored the relationships between patients' perceptions of their readiness for discharge and measures of function, balance, depression risk and balance confidence. Patients' perceptions of readiness for discharge were assessed using a validated tool, the Readiness for Hospital Discharge Scale. The Readiness for Hospital Discharge Scale is comprised of four sub-scales; physical status, knowledge, coping, expected support. Outcomes measured included balance, gait speed, mobility, function, risk of depression and balance confidence. The cohort consisted of 101 older adults who had undertaken inpatient rehabilitation and consented to undertake outcome questionnaires and routine physical testing prior to discharge to home in community. The majority of older adults reported feeling ready for discharge. Higher levels of readiness for discharge correlated with higher scores on physical testing and lower levels of expected support post-discharge. Patients also scored relatively low on balance confidence and were below the threshold for depression risk prior to discharge to home.

Study 2 was a quantitative design and explored the same cohort to investigate if perceptions of readiness changed after one-month post-discharge. Study 2 findings indicated that patients tended to overestimate their readiness for hospital discharge at discharge. Self-reports of physical status, expected support and balance confidence decreased after being home in the community for one-month, while the risk of depression increased marginally.

Study 3 examined both the formal and informal factors considered by experienced rehabilitation physiotherapists when discharge planning for older adults. A focus group with semi-structured interview questions was used with experienced physiotherapists who had worked in rehabilitation for more than five years. Experienced physiotherapists appeared to take a 'down the track' perspective when planning discharge. While the current status of the patient was assessed and taken into consideration, experienced physiotherapists also anticipated disease progression, functional or cognitive decline and the likelihood of change in the future.

Study 4 explored the factors considered by novice physiotherapists when discharging older adults from rehabilitation. A qualitative design focus group was conducted with six novice physiotherapists who had less than three months experience in rehabilitation. The same semi-structured interview questions were used for the novice group as for the experienced physiotherapists. Novice physiotherapists are comprehensive when checking function and mobility and have a good insight into the complex nature of discharge planning from rehabilitation. However, they reported forgetting to check on certain aspects related to discharge until the last minute.

Study 5 was a qualitative design and explored patient perceptions of their readiness for discharge at two timepoints. Semi-structured interviews were conducted one on one and face to face with patients within 72 hours prior to discharge. Prior to discharge, only half the cohort reported feeling ready. However, once home, all patients reported retrospectively they actually were ready to return home when discharged. All reported improved function

and mobility post-discharge and overall, patients reported a positive experience with their time in the rehabilitation unit, and the transition from hospital to home.

The findings of this program of research indicate a concerning trend where older adults tend to overestimate their readiness for discharge, physical capacity and the amount of support expected once back at home in the community. There also appeared to be an increase in depression risk one-month post-discharge. With a growing ageing population, successful discharge from hospital and the need to prevent unplanned readmission is paramount to reduce unnecessary burden on the health care system. This body of research may help to inform future directions on areas of required research, information dissemination to health providers and how to best help keep our older Australians living in their own homes for longer.

Statement of Authorship

This thesis contains no material submitted towards the award of any other degree program in any other tertiary institution.

No other person's work has been used without due acknowledgement in the main text of this thesis.

All research procedures reported in this thesis were approved by the relevant Human research ethics committees.

Name: Sarah T. Mattin

Signature: Sarah T. Mattin

Date: October 10, 2022.

Publications during candidature

This is a traditional thesis and therefore there are no publications during candidature. There is one publication associated with this thesis which is listed below.

Peer-reviewed publications associated with this thesis

Kuys, S., Donovan, J., Mattin, S., & Low Choy, N. *Balance self-efficacy in older adults following inpatient* rehabilitation. *International Journal of Rehabilitation Research.* 2015;38:167-172.

Conference presentations

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Keywords

Perceived readiness for discharge, older adult, physiotherapy, rehabilitation, discharge planning, community

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List of Abbreviations used in the thesis

ABC	Activities specific Balance Confidence Scale
ADL	Activities of daily living
BOOMER	Balance Outcome Measure for Elder Rehabilitation
CHSP	Commonwealth Home Support Program
FIM	Functional Independence Measure
GDS	Geriatric Depression Scale
HCP	Home Care Package
MAC	My Aged Care
MEMS	Modified Elderly Mobility Scale
MRHDS	Modified Readiness for Hospital Discharge Scale
RHDS	Readiness for Hospital Discharge Scale
TUG	Timed up and Go Test
SPSS	Statistical Package for Social Sciences
10MWT	10 Meter Walk Test
GARU	Geriatric and Rehabilitation Unit

Chapter 1: Introduction

1.1 Rationale

The population of Australia is growing and the number of older adults is increasing (ABS, 2020). Statistics bureau projections indicate that by the year 2097 there will be 12.8 million adults aged 65 and over (ABS, 2020). Reports from the Australian Institute of Health and Welfare (AIHW) state that older adults are more likely to be hospitalised than younger age groups (AIHW, 2020a). In the past four years, hospitalisations have increased in each reported age category by 11% (65-74 years old), 12% (75-84 years old) and 5% (85 years and over) respectively (AIHW, 2021). Of the 11.8 million hospital admissions in 2020-2021, 360,450 were adults aged 60 and over with subsequent rehabilitation admissions (AIHW, 2022).

Once the cause for hospitalisation has been resolved, older adults are then discharged from the acute care system. While there may be some admissions to residential aged care facilities, many older adults are discharged from hospital back to their usual place of residence (AIHW, 2019). Of concern are the relatively high rates of hospital admissions (46%) that have been classified as potentially preventable in older adults (AIHW, 2022). There is an imperative need to ensure that discharge to home for older adults is successful and that preventable readmissions back to hospital are minimized. The need to support older adults in the community has driven the creation of a Commonwealth Government funding program to provide assistance and health care in the home setting. Increases in health expenditure

have seen the allocation of an extra $7 billion for aged care (AUSGOV, 2022) to assist older Australians to remain living in their own homes.

Older adults may require transfer to rehabilitation after an acute hospital admission following cerebrovascular accidents (CVAs), orthopaedic conditions such as fractures following falls, and a wide variety of other conditions including general de-conditioning. Typically, rehabilitation populations suffer from comorbidities (Di Libero *et al*., 2001; Patrick *et al*., 2001) and require extensive therapeutic intervention (Harris, O'Hara, and Harper 1995; Patrick *et al*., 2001). Clinical outcomes during rehabilitation may be related inversely to the complexity of comorbidities involved (Patrick *et al*., 2001). Despite the comorbidities and need for extensive intervention, older adults may be discharged home at an intermediate stage of recovery (Bauer *et al*., 2009). Thus, discharge planning for older people in rehabilitation is often complex and multi-factorial (Coffey *et al*., 2019; Victor *et al*., 2000; Braet, Weltens, and Sermeus 2016; AIHW, 2019). A need exists for comprehensive planning including the consideration of comorbidities when discharging older adults from rehabilitation back to home (Bauer *et al*., 2009; Bull and Roberts, 2001). Sub-optimal discharge planning may result in unplanned readmissions (Considine *et al*., 2020), increased unscheduled visits to health care practitioners (Henderson and Zernike, 2001; Bertakis and Azari, 2011), decreased satisfaction with discharge planning processes (LeClerc *et al*., 2002) and risk of readmission when family or informal carers aren't involved (Bauer *et al*., 2009; Considine *et al*., 2020; Bull, 1994; Bull, Hansen and Gross, 2000). Multidisciplinary teams in rehabilitation should undertake complex discharge planning from an interdisciplinary approach (Hickman *et al.*, 2015) to assist in the transition to home. Physiotherapists are integral to this multidisciplinary team and are often responsible for clearance from a

physical mobility perspective (APA, 2022).

Physiotherapists use clinical outcome measures to assess physical function of older adults prior to clinically determining readiness for discharge (ANZPHYSIO, 2015). Decisions around discharge from a physiotherapy perspective are typically based on measures of physical capacity that indicate the ability to function safely (Haines *et al*., 2007; Bohannon, Andrews and Thomas, 1996). Informal assessment may also occur clinically prior to discharge to home. The frail elderly population often found in rehabilitation units presents a challenge for discharge planning with numerous factors to take into consideration (Di Libero *et al.*, 2001). One major factor that has yet to be formally investigated in rehabilitation populations is the patient's own perception of readiness for discharge. The concept of patient perceptions of readiness for discharge are now starting to be investigated internationally (De Lange *et al*., 2020; Aldughmi *et al*., 2021; Siow *et al*., 2019) but had not been explored in Australia prior to the commencement of this thesis. Research to date has not investigated the relationship between self-reported readiness and clinical outcome measures of physical function. Existing research has predominantly taken place in acute medical wards (Brent, 2013; Coffey and McCarthy, 2013; Weiss *et al*., 2007; Mabire et al., 2015), with no research to date undertaken with older adults discharging from rehabilitation settings back to home.

The need for this program of study arose when physiotherapists in the rehabilitation unit at a tertiary hospital in Queensland Australia identified patients who were deemed ready and had discharged home, subsequently had unplanned readmissions back to hospital. This occurred despite intensive rehabilitation and the routine use of clinical outcome measures to demonstrate adequate physical capacity to function at home. Older adults were re-

presenting to hospital despite still being physically capable of functioning in their home environment. This program of research was designed to explore patient perceptions of readiness for discharge and other factors involved in discharge including physical function, balance, mobility, balance confidence and depression risk. Additionally, this program of research aimed to increase understanding of patient and physiotherapists' experiences with rehabilitation discharge and discharge planning.

1.2 Thesis Outline

This thesis was designed using a multi-methods approach and is comprised of 9 chapters including 2 quantitative studies and 3 qualitative studies. Below is brief synopsis of each chapter.

Chapter 2 (Background) provides an overview of the current evidence regarding older adults that comprise rehabilitation populations, defines the geriatric rehabilitation unit context, and discusses complex hospital discharge planning of the older adult. Current evidence regarding patient perceptions of discharge readiness and physiotherapist opinions regarding discharge readiness are also explored and summarized.

Chapter 3 (Methodology) outlines the rationale for the methodology used and details the study designs used in this program of research. Studies 1 and 2 required a quantitative approach whereas Studies 3, 4 and used qualitative approaches including focus groups and semi-structured interviews. Ethical approval was obtained from three different ethics committees during this program of research.

Chapter 4 (Study 1) examined self-reported readiness for discharge of older adults transitioning from rehabilitation to home in the community. The primary aim was to investigate self-reported perceived readiness for discharge of older adults at discharge from rehabilitation to home in the community. Secondary aims were to investigate the relationship between perceived readiness and clinical assessment of balance, mobility, gait, balance confidence and depression risk. It was hypothesized that older adults over-estimate their physical and perceived readiness for discharge prior to returning home. The findings of this study identified the need to further investigate the transition process.

Chapter 5 (Study 2) expanded on the findings of Study 1 and investigated whether perceived readiness for discharge, balance confidence or depression risk changed in the first month after discharge back home. Primary aims of this study were to determine whether patient perceptions of readiness for hospital discharge to home in community changed when assessed at one-month follow-up compared to baseline assessment prior to discharge from rehabilitation. Secondary aims were to determine any differences in subjective balance confidence and depression risk post-discharge. Primarily, it was hypothesized that older adults would realise their over-estimation of readiness for discharge, once home in the community. Secondarily, based on previous research findings, it was hypothesized that older adults living in community would be at higher risk of depression once back at home.

Chapter 6 (Study 3) was a qualitative study using a focus group of experienced physiotherapists. A focus group was conducted to identify the multifactorial aspects of complex discharge planning that experienced physiotherapists consider prior to patient

discharge. All registered physiotherapists should possess a base level of knowledge and competency.

Chapter 7 (Study 4) was a qualitative study design with a focus group of less experienced (novice) physiotherapists. The second focus group was undertaken to expand on the findings of Study 3. The aim was to examine the factors considered by novice physiotherapists during discharge planning of older adults in rehabilitation settings. Semi-structured interviews explored aspects of discharge identified in Studies 1 and 2 with patient groups.

Chapter 8 (Study 5) was undertaken to further understand readiness for discharge from the older adults' perspective. This final qualitative study consisted of both pre-discharge and post-discharge semi-structured interviews with a small sample of older adults discharging from rehabilitation. The aim was to better understand patients' perspectives of the discharge process from rehabilitation to home from two different time points (pre-discharge and post-discharge) and determine whether patients' perceptions changed once home in community. Of interest were physical function, coping, knowledge, support, barriers and facilitators and patients' experience of the transition to home.

Chapter 9 (Discussion) forms the final chapter of this thesis and reports an overall discussion from the findings of the above five studies. A summary of the findings of each study will be reported. Clinical implications, strengths and limitations will be discussed as well as areas for future research regarding the hospital to community interface that require attention to ensure a smoother transition from hospital to home for the growing elderly population.

Chapter 2 : Background

Geriatric rehabilitation units are often populated by older adults with multiple comorbidities undergoing therapeutic intervention for a variety of reasons. These multiple comorbidities in the older rehabilitation populations add complexity to discharge planning. This chapter outlines the population typically found in rehabilitation and the perceptions of those patients about readiness for discharge to home. This chapter also discusses the way a typical Australian rehabilitation unit functions because this is the context where this program of research was undertaken. This discussion will particularly focus on the discharge planning process and the role of physiotherapists as part of the multidisciplinary rehabilitation team. Lastly, the aims and significance of this program of work are outlined.

2.1 Rehabilitation Populations

Rehabilitation populations in Australia are typically comprised of older adults with comorbidities and decreased functional capacity (Di Libero *et al.*, 2001; Giaquinto *et al.*, 2001). Patients may be admitted to rehabilitation for a variety of conditions including stroke (Mckenna *et al.*, 2002), ortho-geriatric fracture (Dakhil *et al.*, 2021) or general de-conditioning (Martinez-Velilla *et al.*, 2021). The aim of rehabilitation admission is to address hospital associated de-conditioning (Kosse *et al.*, 2013) and achieve the best possible level of function and independence prior to discharge (RACP, 2012) for older community dwelling adults. The majority of older adults discharged from hospital return to their usual residence (AIHW, 2019).

The increased financial burden on the health care system and increased service utilisation (AUSGOV, 2020; AIHW, 2022) have led to a need to expedite discharge and a decreased length of hospital stay (Lincoln *et al.*, 2004). Older adults report feeling like the discharge process is being rushed (Considine *et al.*, 2020). This feeling of being rushed, combined with feelings of needing better communication and ensuring readiness for discharge may contribute to unplanned readmission to hospital (Considine *et al.*, 2020). Older adults aged 65 years and over have the highest rates of unplanned readmission with one in seven discharges resulting in unplanned readmission in a major Australian health service (Considine *et al.*, 2019). The implications of the statistics around unplanned readmission to hospital are of concern, especially with recent study findings that treating teams tended to over-estimate patients' perceptions of readiness for discharge in 48% of events (Manges *et al.*, 2021). Nurses have also been found to tend to over-estimate patients' readiness for discharge (Weiss *et al.*, 2010). There exists a need to further investigate patient's perceptions of their readiness for discharge and the factors around the discharge process that are of concern to patients.

2.2 Patient Perceived Readiness

In 1979 the concept of readiness for discharge was introduced by Fenwick (Fenwick, 1979). Readiness for discharge was purported to be a combination of social, psychological and physiological factors (Fenwick, 1979). The concept of readiness for discharge was further expanded as being an 'estimate of patients' and family members' ability to leave an acute care facility' (Titler and Pettit, 1995). More recently an operational concept of readiness for hospital discharge has been determined and four main attributes have been found; adequate support, psychological ability, physical stability, and adequate information and

knowledge (Galvin *et al.*, 2017). Increasing financial demand on the health care system (AUSGOV, 2020) and the increasing number of older adults (ABS, 2020) with complex comorbidities (Di Libero *et al.*, 2001) increases the need to address patient perceived readiness for discharge from rehabilitation for older adults.

Self-reports of readiness to return home and reintegrate into community may play an important role in patient outcomes post discharge for older adults. Adults over 65 years of age, who have a length of stay in hospital of greater than 2 days, and a previous hospital readmission within the past 6 months are at greater risk of early unplanned readmission (Considine *et al.*, 2019). Previous descriptive studies provide evidence that reports of lower readiness for discharge have significant relationships with early unplanned readmission, increased needs of family support and increased use of both formal and informal support (Coffey and McCarthy, 2013). Lower readiness for discharge was also deemed a significant predictor of informal support requirements (Coffey and McCarthy, 2012). Older adults reporting lower readiness for discharge expected higher levels of informal support from family (Coffey and McCarthy, 2012).

Improvements in communication, clinical care, ensuring readiness for discharge and shared decision-making about discharge timing and goals post-discharge ensuring readiness for discharge may potentially assist in avoiding early unplanned readmission (Considine *et al.*, 2020). Further support indicates that information, communication, and patient participation are imperative for successful discharge (Krook *et al.*, 2020). Patients who live with someone else have shown higher readiness for hospital discharge, and a lower risk of readmission

(Siow *et al.*, 2019). These findings suggest that patients returning home to live with someone could be less likely to have unplanned readmission to hospital.

Previous research has illustrated that pre-discharge, patients report being satisfied with their level of preparation and the information received prior to discharge (Weiss *et al*., 2007; Almborg *et al.*, 2009). However, when questioned further after discharge regarding readiness and preparation, problems were identified that highlighted gaps in the information provided at the time of discharge (Weiss *et al.*, 2007; Almborg *et al.*, 2009). Gaps in patient knowledge may include; social support networks, medication purpose and dosage, follow-up instructions (Lee *et al.*, 1998; Jacobs, 2000; Henderson and Zernike, 2001), danger signals to watch for and restrictions in activity, work and foods (Kleinpell, 2004). Patient perceptions of readiness for discharge appear to be directly related to the success of the discharge and risk of adverse events (Graumlich *et al.*, 2008; Weiss *et al.*, 2014). An early screen for discharge planning tool has shown correlations between those with higher needs for discharge planning support and more problems with personal care, household activities, mobility and physical difficulties once discharged home (Holland et al., 2013).

Prior to discharge, patients perceived they had received information, but did not feel that they had been involved in the discharge planning process (Almborg *et al.*, 2009). Of interest were those who had sustained hip fractures, were less prepared than other medical-surgical groups and may require increased education and information to ensure readiness (Brent, 2013). Providing patients with information prior to discharge improved adherence to discharge regimes (Raynor, 2020), increased confidence (Gonçalves-Bradley, 2015) and decreased stress and anxiety (Husson, 2011). Interventions such as follow-up phone calls

(Misky *et al.*, 2010; Vernon *et al.*, 2019), education and the use of social supports have been found effective in reducing the incidence of hospital readmission (Burke *et al.*, 2014).

Intervention provided by a multidisciplinary team using an interdisciplinary approach achieves optimal outcomes for patients (Bull and Roberts, 2001; Stenvall *et al.*, 2007; Hickman *et al.*, 2015; Moayyedi *et al.*, 2019; Patel *et al.*, 2019). Involving patients and working proactively with the health care team to set goals also results in better post discharge health outcomes (Jewell, 1996; Bull *et al.*, 2000; Almborg *et al.*, 2009; Gane *et al.*, 2022). Goal setting, attainment and scaling has been shown to be an effective tool in rehabilitation of older adults (Hurn *et al.*, 2006). Neurological rehabilitation patients reportedly prefer to be involved in setting relevant goals and achieving greater satisfaction (Holliday *et al.*, 2007). Whether greater involvement of the patient, education, goal setting leads to increased perceptions of readiness for discharge is not yet known and needs to be investigated.

Initial published evidence surrounding patients' perceptions of readiness for discharge was largely qualitative or case studies based in acute hospital populations and the outcomes predicted from the level of preparation was of poor methodical quality (Fenwick, 1979; Congdon, 1994; Titler and Pettit, 1995). However, improvements in the quality of studies performed, and an increase in the exploration of patient perceived readiness for discharge has brought more evidence to light (Weiss and Piacentine, 2006; Brent, 2013; De Lange *et al.*, 2020; Gledhill *et al.*, 2021).

The readiness for hospital discharge scale has been used in nursing literature to investigate adult medical and surgical populations in America (Weiss *et al.*, 2007; Bobay *et al.*, 2010), and older medical patients in Ireland (Coffey and McCarthy, 2013). The scale has now also been used to investigate patients with spinal cord injury in South Africa (De Lange *et al.*, 2020), people living with HIV in China (Zhang *et al.*, 2021), hepatobiliary surgery (Qian *et al.*, 2021), and depressive disorders (Wang *et al.*, 2021; Xiong *et al.*, 2021). The readiness for hospital discharge scale has been validated, translated and used in a number of countries (Lin *et al.*, 2014; Siqueira *et al.*, 2018; Aldughmi *et al.*, 2021; Mehraeen *et al.*, 2022; Posri, 2022; Sekino, 2022). A short version was validated for use in older adult populations (Mabire et al., 2015) but was undertaken in adult medical-surgical populations and not in geriatric rehabilitation populations. The majority of research identified to date has been completed in nursing literature and with adult medical / surgical / acute / emergency populations (Mabire et al., 2019; Weiss *et al.*, 2007; Bobay *et al.*, 2010; Coffey and McCarthy, 2013; Aldughmi *et al.*, 2021). The quality of discharge teaching and patient readiness has been investigated in an interprofessional approach in inpatient rehabilitation in America (Kneir et al., 2015). The study by Kneir and colleagues was undertaken with rehabilitation inpatients, however it was completed from a nursing perspective. And while nurses play an important role in the multidisciplinary team in rehabilitation settings and are largely involved in discharge planning, this thesis aimed to investigate geriatric rehabilitation populations and their perceived readiness, physical outcome measures, and physiotherapists' clinical reasoning in regard to discharge planning. Thus, this is the first known study investigating patient perceived readiness for discharge in geriatric rehabilitation populations in Australia.

2.3 Rehabilitation Units

Rehabilitation units are often the location of dramatic changes in patient status in the domains of physical function, cognitive function, and medical recovery. A transformation must occur to progress from being a hospital in-patient to being able to function in community prior to discharge from rehabilitation. Present day rehabilitation units are complex yet fundamental areas where multidisciplinary teams work extensively to enhance patients' functional independence (Momsen *et al.*, 2012) whilst being integral in ensuring patient flow through the health care continuum (Coleman *et al.*, 2012; Hickman *et al.*, 2015).

Rehabilitation is a process involving several main components; assessment, goal setting, intervention, and evaluation (RACP, 2012; ANZPHYSIO, 2015). Therapeutic intervention may take place in various settings dependent on the needs of the patient and availability of rehabilitation services (Health, 2015). Medical prognosis, functional impairment and access to services all play a role in the rehabilitation patients' journey, which is often not a linear process (Health, 2015). An increased comorbidity burden results in longer length of stay (Liu *et al.*, 1997; Liu *et al.*, 1999) which may contribute to the duration of rehabilitation stays for older adults. The level of care required may change at any point in the rehabilitation journey, however the primary aim of rehabilitation intervention is to achieve the best functional independence possible prior to discharge home (RACP, 2012).

Within a rehabilitation unit there is typically a multidisciplinary team of health care professionals. The multidisciplinary team may include, but not be limited to; geriatricians, rehabilitation physicians, medical doctors, nursing staff, physiotherapists, occupational therapists, speech pathologists, nutritionists, social workers, and assistants for the

respective disciplines (Norrefalk, 2003). This group of professionals collaborate via an interdisciplinary approach to provide the most comprehensive and coordinated care for the patient as their needs change during the rehabilitation journey (Choi and Pak, 2006; Health, 2020b). The benefits achieved by treating each patient holistically under the care of a highly integrative multidisciplinary team with an interdisciplinary approach have been demonstrated (Halbert *et al.*, 2007; Hickman *et al.*, 2015; Nordstrom *et al.*, 2018). The most important stakeholder in the team is the patient themselves.

Increased patient-centered care results in decreased medical visits, less frequent hospitalizations and fewer diagnostic tests (Bertakis and Azari, 2011; Forsythe *et al.*, 2019). The implication of patient-centered care in an interdisciplinary model includes improved outcomes for the patients (Nordstrom *et al.*, 2018). These improved outcomes may include satisfaction with care, quality of life and a sense of personal control (Poochikian-Sarkissian *et al.*, 2008; Poochikian-Sarkissian *et al.*, 2010). Recent evidence suggests a need for interventions that address older adults' needs, well-being and caregiver engagement (Liebzeit *et al.*, 2021). To ensure all members of the health care team are working collaboratively and to ensure effective communication with all stakeholders, case conferences may be held at regular intervals to allow open discussions and future planning.

Case conferencing in rehabilitation allows for effective communication amongst the multidisciplinary team, patients, their families and carers (Barnes, 2003). Case conferences encourage collaborative goal setting, discussions with families and patients and team communication for the common goal (O'Connor and Playford, 2014). In a typical rehabilitation unit, representatives from the multidisciplinary team may meet on a regular

basis to discuss collaborative goal setting, patient status, current functional status, and the level of functional ability required for discharge. A case conference may assist in improved outcomes due to the collaborative efforts of each team member and may include the patient and their family.

Family inclusion, communication and education by health care providers from early on during hospital admission has been shown to improve discharge planning for older adults (Bauer *et al.*, 2009; Gane *et al.*, 2022). Including patients and their families in the rehabilitation process by providing up to date progress reports, problem solving and goal setting around discharge destinations may be beneficial in discharge outcomes. The increasing number of older adults requiring admission to rehabilitation (AIHW, 2019) appears to be leading towards expedited discharge at an intermediate stage of recovery via the use of transition care programs (Health, 2019).

The trend to discharge early is placing an increased burden of care on the families and carers supporting older people in the community (Bauer *et al.*, 2009). The importance of family inclusion in the discharge plan and transition for patients has been shown to have importance (Loupis and Faux, 2013). Having a caregiver at home may also positively affect the success of discharge to home (Hershkovitz *et al.*, 2007). Previous research has shown that ninety percent of patients are discharged home with one or more barriers such as pain, difficulty with activities of daily living (ADLs) and/or a lack of understanding of their treatment plan (Harrison *et al.*, 2016). Thus, additional support and education may be required for a successful transition from rehabilitation to home (Bauer *et al.*, 2009).

The importance of patient education and effective communication has been related to increased treatment adherence, decreased readmission rates and increased patient satisfaction (Becker *et al.*, 2021). Improved outcomes and knowledge have also been by-products of face-to-face and multimedia patient education (Lee *et al.*, 1998). In the tertiary hospital where this research program took place, patients who were admitted for rehabilitation post fall were encouraged to attend falls prevention classes in line with current evidence (Ong *et al.*, 2021) to reduce future risk of falls. While education alone has not been definitively shown to prevent further cardiovascular events such as stroke (Bridgwood *et al.*, 2018), patients in the rehabilitation unit at were encouraged to attend stroke education classes while inpatients. Given the nature of comorbidity and disease in rehabilitation patients, education for patients and their families should be used to assist with the discharge process.

2.4 Physiotherapy in Rehabilitation

Physiotherapists are integral to the multidisciplinary team in rehabilitation units (Norrefalk, 2003; AIHW, 2020a). Physiotherapists' skills are to assess, analyse, diagnose and assist patients to improve functional mobility and balance during the rehabilitation journey (ANZPhysio, 2015). What may not be appreciated, however are the non-physical factors that are also addressed (Matmari *et al.*, 2014). Factors such as the wants and needs of patients, the ability to participate in care, and patients' life context are all considered in conjunction with function and disability (Jette *et al.*, 2003). The scope of clinical reasoning of physiotherapists during discharge planning has progressed significantly from earlier times when focus was predominantly placed on restoring functional independence and mobility,

improving the activities of daily living (ADLs), and improving quality of life (Patrick *et al.*, 2001).

Physiotherapists utilise clinical outcome measures that assess balance and mobility when determining whether patients are prepared for discharge (ANZPhysio, 2015). This focus on functional capacity may stem from an inherent desire to see older adults return to their home in the community and to prevent transition to residential care facilities. While the assessments of physical function by physiotherapists are well known (ANZPhysio, 2015), what is not known is whether any formal consideration occurs of non-physical factors such as patient perceived preparation for discharge, emotional status, expected support, balance confidence, and knowledge.

As a component of rehabilitation assessment process, physiotherapists may also use goal setting to assist patients in achieving best outcomes (Wressle *et al.*, 2002; Hurn *et al.*, 2006; Black *et al.*, 2010). The Rehabilitation Medicine standards recommend that meaningful and achievable goals are set by the patient and rehabilitation team (RACP, 2012). These goals are then used to measure the progress of the rehabilitation program in the quest to attain the highest possible level of functional independence (RACP, 2012). While evidence encourages clinicians to include patients in the goal setting and discharge planning process (WHO, 2013; Erlang *et al.*, 2021), there are still reports of patients not being included in discharge planning and decision making (Congdon, 1994; Efraimsson *et al.*, 2004; Bucknall *et al.*, 2020). On a promising note, increasing evidence regarding discharge planning and patient perceptions of readiness for discharge are showing a positive trend towards a more inclusive

approach to the discharge process (Kneir et al., 2015; Mabire et al., 2015; Mabire et al., 2019).

2.5 Discharge Planning

The purpose of discharge planning in hospitals is to reduce the risk of readmission following discharge by improving the coordination of services and reducing delayed discharge (Goncalves-Bradley *et al.*, 2022). Discharge planning occurs in many countries and is a routine process in health systems (Goncalves-Bradley *et al.*, 2022). An increased focus is being placed on the inclusion of coping, knowledge, environmental and physical aspects of a person's life during discharge planning (Fitzgerald Miller *et al.*, 2008; Coffey and McCarthy, 2013; Mehraeen *et al.*, 2022). It is not known whether these factors are being routinely addressed in clinical practice.

The extent to which physiotherapists consider non-physical factors when discharge planning is also unclear. A Canadian study with physiotherapists in an outpatient orthopaedic setting has begun to investigate these clinical and contextual factors that influence discharge making decisions (Pashley *et al.*, 2010). There exists a need for further research to determine whether physiotherapists in complex rehabilitation populations investigate the scope of factors clinical reasoning encompasses. Another aspect of discharge lacking clarity, is how extensively health professionals are engaging the patient and their family / caregiver in the discharge planning process (Bucknall *et al.*, 2020). Early research suggests the inclusion of patients and carers results in more desirable discharge outcomes than when health professionals make the decisions and inform the patients afterwards (Congdon, 1994).

Subsequent research displayed a similar trend in health professionals informing patients about decisions after they had been made (Efraimsson *et al.*, 2004). In 2009 further research was completed on patient's perceptions of their involvement in discharge planning (Almborg *et al.*, 2009) again indicating a lack in actual involvement of patients in discharge planning. This study consisted of 188 participants which is a large sample size, however, it was completed in acute stroke patients only and did not include complex rehabilitation populations. More recently a shared mental model was used to examine the patient and discharging team with regards to perceptions of readiness for discharge (Manges *et al.*, 2021). Manges and colleagues investigated how interprofessional teams coordinate complex tasks such as discharge planning. While this study is promising in terms of investigating the collaboration of an interprofessional team, the team only comprised of nurses, coordinators and physicians (Manges et al., 2021). This study did not account for Physiotherapists who play an important role in assessing function and mobility and are a part of the multidisciplinary team that collaborate in geriatric rehabilitation units in Australian hospitals (Health, 2020b).

2.6 Aims and Significance

The overall aim of this thesis is to examine older adults' perceptions of readiness for discharge from rehabilitation to home in community. There is an increasing population of elderly Australians and a trend towards remaining at home in the community for as long as physically feasible. Thus, it is imperative to ensure that discharge planning encompasses all aspects of the transition to home including whether older adults feel prepared to return home. The recent events of Covid 19 have only highlighted the need for older Australians

(and older adults in general) to remain at home with support to reduce the risk of preventable readmission to hospital where resources are at an all-time low and risk of additional infection is at an all-time high.

A secondary aim of this thesis is to determine whether a difference in discharge planning clinical reasoning and capacity exists between novice and experienced physiotherapists in rehabilitation settings. With the need to ensure the best possible discharge outcomes for our elderly populations, it is vital to ensure that physiotherapists are educated and prepared to consider every aspect of discharge to facilitate a smooth and lasting transition from hospital to home.

The studies in this program of research examined several aspects of the discharge process including the perspectives of elderly patients, novice and experienced physiotherapists. Research was undertaken using a variety of methods including quantitative questionnaires and scored outcome measures as well as qualitative focus groups and individual interviews.

The older adult population participating in this program of research is indicative of a typical rehabilitation cohort and this patient group is projected to increase in number in the years to come. There exists a need to encourage positive aspects of the discharge process and identify any weaknesses that may be rectified in an attempt to ensure the best possible chance of successful discharge. Successful discharge being the scenario whereby the patient is not re-admitted to hospital earlier than desired due to unforeseen circumstances and events which may be prevented by addressing any flagged issues prior to discharge.

Patients who require admission to rehabilitation units often suffer from complex comorbidities and are often not as straight forward to discharge to home in community (Bobay *et al.*, 2010; Brent, 2013; Kuys *et al.*, 2016; Gledhill *et al.*, 2021) as their counterparts being discharged from acute medical and surgical wards. By assessing the discharge process from both the patients' and physiotherapists' perspectives, it is hoped that this thesis may identify factors to focus on to reduce the preventable re-admissions and reduce the burden on the health care system. Examining the clinical reasoning of both novice and experienced physiotherapists, it may determine if / where there is a gap in knowledge.

Chapter 3: Methodology

This multi-methods program of research was designed to explore patient readiness for discharge and factors that may be contributing to unplanned readmission to hospital and subsequently rehabilitation. Additionally, this program of research aimed to increase understanding of patient and physiotherapists' experiences with rehabilitation discharge and discharge planning. A mixed methods approach would not have sufficed due to the design combining quantitative and qualitative methods in a single study (Mark, 2015). A multi-methods design was chosen due to the inability of a single method to provide enough depth and breadth of information to answer the research aims (Hesse-Biber, 2015). Use of the multi-method design (Anguera *et al.*, 2018) allowed the candidate to investigate scored functional outcomes with a quantitative methods design and then ask further questions about the data elicited in a follow up study with the use of a qualitative methods interview.

Two quantitative studies examined physical function and self-reported readiness for hospital discharge scale (Study 1 and Study 2). Three further qualitative studies were used to gain a deeper understanding of physiotherapists' clinical reasoning around discharge planning (Study 3, Study 4) and patients' perceptions regarding the discharge process (Study 5).

3.1 Study Conception

The original concept for this program of research was developed by the PhD Candidate and a lead clinical physiotherapist in the participating facility (Jacqueline Donovan (nee Mitchell)). The project was initially commenced as a quality project to determine whether older adults undergoing inpatient rehabilitation were ready for discharge back to their homes in

community. Initially, the aim was to examine patients' physical capabilities to determine whether a baseline level of function was being attained across older adult patients being discharged from rehabilitation. From this initial exploration, it became apparent that numerous patients who had been recently discharged to home re-presented to hospital, and subsequently to the rehabilitation unit. Also recognised was that investigating patients' perceptions of readiness for discharge and the discharge process was important to understand the possible causes of failed discharge and identify any obvious reasons for readmission. Subsequently, examining the relationship between perceived readiness for discharge and physical function became necessary to explore any possibility that sub-optimal physical function may lead to readmission. Once all areas of interest were investigated at the time of discharge, the question arose: does anything change after one month back home, and if so, what? Thus, the second quantitative study was completed to examine patients at two timepoints, pre-discharge and post-discharge, to identify any changes once patients had a chance to be at home in the community for one month. The multifactorial nature of complex discharge planning in older adults with comorbidities drove the desire to then investigate the clinical reasoning of both novice and experienced physiotherapists to determine what factors they consider when planning discharge. Also of interest was whether there were any differences in the clinical reasoning between the two groups. Lastly, the candidate wanted to delve deeper into the findings of the first studies investigating patient perceptions of readiness for discharge to expand on the different areas that patients consider during the transition back to home.

3.2 Participating Facility

This research program was conducted within the Princess Alexandra Hospital, in Brisbane, Queensland, Australia. The Geriatric and Rehabilitation Unit (GARU) at the Princess Alexandra Hospital (PAH) in Queensland, Australia is part of a large tertiary teaching hospital. The Geriatric and Rehabilitation Unit consists of three wards for long stay inpatient rehabilitation. Each ward has between 20 and 28 beds, with a total of 76 beds. Within each ward, multidisciplinary teams work with an interdisciplinary approach to provide therapeutic services including medical, nursing, physiotherapy, occupational therapy, dietetics, social work, and speech pathology. Therapy may be provided either in an individualized approach with a patient-specific prescribed program, or in a group setting. Group classes may also include fall prevention education, balance classes or stroke education. The Geriatric and Rehabilitation Unit provides intervention for stroke survivors and other neurological disorders, ortho-geriatric patients with and without limb fractures, and for those who require an upgrade in mobility due to frailty, general debility or de-conditioning following acute hospitalization. The Geriatric and Rehabilitation Unit has an internal database where all patient demographics are stored including outcome measures routinely completed at admission and again at discharge.

The Princess Alexandra Hospital Geriatric and Rehabilitation Unit physiotherapy staffing operates five days a week and therapeutic intervention is provided Monday – Friday; there is no weekend service. Staffing operates on a rotational basis and physiotherapists are rotated through the various wards quarterly. Senior rehabilitation physiotherapists often remain in the rehabilitation unit throughout the year but may rotate through the various rehabilitation wards on a six-monthly basis. Junior physiotherapists or those in new graduate years rotate

throughout the entire hospital on a quarterly basis and may only complete 3 months in the rehabilitation unit in an entire year. This chapter will report on the research methods used in this program of research.

3.3 Study Design

A multi-methods design was developed to investigate perceived readiness for discharge and physiotherapists perspectives of discharge planning. The need existed to use both quantitative and qualitative studies to provide a depth of understanding around this complex topic (Hesse-Biber, 2015).

Quantitative designs were employed in the first two studies of this research program to attain empirical data regarding patients' perceptions of readiness for discharge, physical capabilities, balance confidence, and risk of depression. Studies 3, 4 and 5 were performed using qualitative designs to gain a deeper understanding of the discharge process from both physiotherapists' and patients' perspectives. The first two qualitative studies involved two physiotherapist focus groups, one of experienced and one of novice clinicians to delve deeper into the clinical reasoning behind discharge planning decisions. The final qualitative study comprised individual patient interviews to determine whether patient perceptions of the discharge process changed post-discharge.

3.4 Ethical Approval

Ethical approval was gained from three separate bodies during the completion of this thesis. The PhD candidate was a physiotherapy student at Bond University and was undertaking a placement at the Princess Alexandra Hospital when the project commenced. Approval was sought and gained from both the Metro South Human Research Ethics Committee (HREC No: 10/QPAH/193) (Appendix 1) and Bond University Research Ethics Committee. Once the candidate gained admission as a Doctor of Philosophy student at the Australian Catholic University, external ethics approvals were registered with the Australian Catholic University (Ethics No: 2012286QR) for both quantitative and qualitative phases of the project (Appendix 2).

3.5 Ethical Considerations

Permission for collection of patient data from an internal database in the geriatric rehabilitation unit was gained from the geriatric rehabilitation unit physiotherapy department at Princess Alexandra Hospital as the hospital has ownership of the data. Once matched with collected demographics and outcome measure scores, patient data was de-identified and used as a collective cohort.

Patients completed informed consent forms that outlined inclusion in Study 1 (performed at discharge), Study 2 (performed one-month post-discharge). Informed consent was gained directly from each rehabilitation inpatient immediately prior to discharge to home. Informed consent was also collected from patients for Study 5 which consisted of interviews at discharge and again one-month post-discharge. Participants in Study 5 were informed that

audio-video recordings would be used to assist with transcription, accuracy, and thematic analysis. To ensure anonymity, all identifiable data was removed during transcription and participants were allocated an alphanumerical code. Participants were assured that any quotes used for this thesis or future publications would be de-identified to protect their identity.

Informed consent was also collected for Studies 3 and 4 from participating physiotherapists. Physiotherapists were assured that participation in the study would in no way influence their employment. Experienced and novice physiotherapists were provided with an overview of the focus group and the purpose for undertaking the study. They were also provided with revocation of consent forms and given ample time to withdraw. Physiotherapists were made aware that the focus groups would be audio-video recorded for transcription and quality purposes, but that any quotes used for this thesis or future publications would be de-identified. Novice and experienced focus groups were conducted separately on different days and times and no direct supervisors or managers were present at the time of the focus group for the novice physiotherapists. All identifiable data were removed and physiotherapists were allocated an alphanumeric code during audio-video transcription.

Data for all five studies was stored on a secure computer with password protection. All hard copies of questionnaires, demographic forms and consent forms were stored in a secure locked cupboard in the physiotherapy office of the geriatric rehabilitation unit as per ethics committee requirements.

3.6 Quantitative Studies

Two quantitative studies were conducted within this research program. These were the first two studies of this doctoral program. Methods of each study are detailed below.

3.6.1 Aims

The aims of Study 1 were:

a) To investigate self-reported perceived readiness for discharge of older adults at discharge from rehabilitation to home in the community
b) To identify if high or low perceived readiness revealed differences in balance, gait, functional mobility, balance confidence and depression risk.

The aims of Study 2 were:

a) To determine whether patient perceptions of readiness for hospital discharge to home in community changed when assessed at one-month follow-up compared to discharge to home from rehabilitation (baseline)
b) To determine any differences in balance confidence and depression risk post discharge

3.6.2 Study Design

A prospective cohort longitudinal study design was used across the two studies. Study 1 reports on the first data collection timepoint, at hospital discharge. Study 2 reports on the second data collection timepoint, at one-month post hospital discharge.

3.6.3 Participants

Participants included in-patients over the age of 60 years of age who were taking part in a rehabilitation program in GARU. Participants, as a sample of convenience, were recruited over a two-year period from three different wards (76 beds) in the rehabilitation unit. To reduce recruitment bias, primary researchers were not directly involved in participant recruitment. Treating physiotherapists identified and recruited potential participants who may be appropriate to meet the eligibility criteria for participation. Treating physiotherapists rotated through the rehabilitation unit on a three-monthly basis, also reducing the risk of recruitment bias. Participants were not remunerated in any way for their participation in the study.

3.6.3.1 Inclusion Criteria

All male and female patients undergoing rehabilitation for a variety of conditions were eligible for Study 1 and 2 if they met the following inclusion criteria:

- Aged 60 years and over to include older adults with complex comorbidities or were of poor health status and likely to require inpatient rehabilitation (Dyussenbayev, 2017)
- Were undertaking rehabilitation program for a neurological disorder, or ortho-geriatric problem or frailty / de-conditioning
- Length of stay in the rehabilitation unit greater than three (3) weeks (regardless of acute hospital stay) (Meyer *et al*., 2012; Camicia *et al*., 2016) to ensure that participants had sufficient time to progress their functional abilities, attend any

educational or physical training groups available, and to gain insight into their current functional status and abilities

- Scored above 25/35 on the Functional Independence Measure Cognitive component (Keith *et al*., 1987; Turner-Stokes *et al*., 1999) to ensure capacity to consent
- Being discharged to home in the community
- Ability to speak, read, and write with an adequate basic level of English to complete questionnaires
- Ability to walk any distance with or without a walking aid and able to perform at least one component of the functional balance and mobility tests routinely completed at discharge - amputees who had a prosthesis and were ambulatory were considered eligible to participate if they met all other criteria

For Study 2, the same eligibility criteria applied. In addition, participants eligible to be included in Study 2 were those recruited for Study 1 who were willing to participate in a one-month post-discharge follow up. In order for participants from Study 1 to be followed up post-discharge in Study 2 they were required to have discharged to home in the community with or without family.

3.6.3.2 Exclusion Criteria

For Study 1, patients who fell under any of the following categories were excluded from the study:

- Being discharged to a nursing home, high or low care residential care facility, respite care, or a family member's house

- Had a diagnosis of dementia or Alzheimer's disease and unable to provide informed consent
- Were unable to mobilise or were restricted to using a wheelchair for all mobility activities
- Unable to provide written informed consent

Any patients recruited to Study 1 who had been admitted to a residential care facility, moved into an alternate home with family members or been readmitted to hospital at the time of the follow up assessment were excluded from participating in Study 2.

3.6.4 Recruitment

Treating physiotherapists of all inpatient wards identified patients who fitted the inclusion criteria and asked patients if they would be interested in speaking to the researchers. One of two primary researchers (PhD candidate or lead clinical physiotherapist) discussed participation in the study with the patient who was provided with a verbal explanation within 48 hours prior to discharge. If agreeable, patients were provided with an information sheet outlining in detail the project aims, risks and benefits, involvement requirements, contact details for withdrawal or complaint, and other pertinent information. Informed consent forms were provided to all participants to complete after verbal explanation and agreeance to participate in the study.

At the time of recruitment for Study 1, participants were also informed of the ongoing nature of the study and consented to be contacted at one-month post-discharge for a follow

up assessment. Study 1 participants at the time of recruitment were provided with revocation of consent paperwork and were briefed about receiving a phone call and subsequent postal mail out at one-month post-discharge for independent completion of study questionnaires. At one-month post discharge from rehabilitation, participants were contacted by phone to determine eligibility and willingness for Study 2 participation.

3.6.5 Outcome Measures

The primary outcome measure was the Modified Readiness for Hospital Discharge Scale (Weiss and Piacentine, 2006). Secondary measures included the Balance Outcome Measure for Elder Rehabilitation (Haines et al., 2007), and the timed 10 Meter Walk Test (Bohannon, 1996), Modified Elderly Mobility Scale (Kuys & Brauer, 2006), as well as subjective reports of balance confidence with the Activities specific Confidence Scale (Powel & Myer, 1995).

All outcome measures were assessed at both time points; at hospital discharge and at one-month follow up. At one-month follow up questions were reframed to seek retrospective readiness for discharge from participants.

3.6.5.1 Primary Outcome Measure

Patient perceived readiness for discharge was determined using the Modified Readiness for Hospital Discharge Scale. The Readiness for Hospital Discharge Scale (RHDS) is a 23 item self-report questionnaire investigating patient perceived readiness for hospital discharge (Weiss and Piacentine, 2006). The tool comprises four sub-scales encompassing personal status

(physical and emotional state, questions 2-8), knowledge (perceived adequacy of the information needed to respond to common concerns and problems, questions 9-16), coping (perceived ability to self-manage personal and health care needs post-discharge, questions 17-19), and expected support (the emotional and instrumental assistance expected by the patient following hospital discharge, questions 20-23). The scale has been validated with adult medical-surgical patients in a tertiary hospital in the United States (Weiss and Piacentine, 2006). The RHDS has been used with parents of hospitalized children (Weiss *et al*., 2008), adult medical-surgical patients (Weiss *et al*., 2007; Bobay *et al*., 2010), and orthopaedic patients with hip fracture (Brent, 2013). A higher score on the RHDS has been shown to correlate positively with readiness for discharge from the acute hospital setting to home, and with coping abilities post-discharge (Weiss et al., 2014; Bobay et al., 2010).

As the tool had not been previously used in the rehabilitation setting, permission from the primary author was gained to modify the RHDS from the original version. The addition of four questions under a new sub-section entitled 'Rehabilitation' was made with permission of the original author to ensure that domains pertinent to the rehabilitation inpatient population were captured by the questionnaire. These additional items were not validated prior to or as part of this project due to the timing of the project being completed.

The Modified Readiness for Hospital Discharge Scale questions (MRHDS) as used in this program of research are presented as Table 3.1. The complete scale consists of three dichotomous yes/no questions and twenty-five questions which are scored from 0-10. Several items are reverse scored, and a score of >7 indicates high readiness for discharge. The total scale is scored out of 250. The complete scale is copyrighted and cannot be

published in this thesis, however may be obtained from the link:

https://www.marquette.edu/nursing/hospital-discharge-scales-general.php.

Table 3.1: The Modified Readiness for Hospital Discharge Scale Questions

Instructions:
Please check or circle your answer. Most of the responses are on a scale from 0 to 10. The words below the number indicate what the 0 or the 10 means. Pick the number between 0 and 10 that best describes how you feel. For example, circling number 7 means you feel more like the description of number 10 than number 0 but not completely.

24. How much has the **rehabilitation team** contributed towards helping you to feel prepared for return to life at home?	0 1 2 3 4 5 6 7 8 9 10 Not At All A Great Deal
25. How much do you feel your **physical abilities** will improve once you are at home?	0 1 2 3 4 5 6 7 8 9 10 Not At All A Great Deal
26. Do you feel the rehabilitation team have **sufficiently** involved your family / carers in preparation for your return home?	0 1 2 3 4 5 6 7 8 9 10 Not At All A Great Deal
27. A) Do you have a **Home Exercise Program**? 27. B) Are you **able to complete** it?	[Y] [N] [Y] [N]
28. What factors in the rehabilitation process helped you to feel ready for home? **Consider all the people involved in your rehabilitation any education, training or support you may have received.** (OT, SW, dietician, Nursing, PT, speech, doctors)	- - -
29. How do you think we could have better prepared you for discharge home? What could we have done better? We would appreciate any other comments or feedback about your hospital stay:	

Modified with permission from original: Weiss, M. E., & Piacentine, L. B. (2006). Psychometric properties of the Readiness for Hospital Discharge Scale. *J Nurs Meas, 14*(3), 163-180.

At one-month follow up retrospective patient perceived readiness for discharge was determined. The four sub-scales encompassing personal status (physical and emotional state), knowledge (perceived adequacy of the information needed to respond to common concerns and problems), coping (perceived ability to self-manage personal and health care needs post-discharge), and expected support (the emotional and instrumental assistance expected by the patient following hospital discharge) were still included. The wording and

tense of the scale were changed to reflect past tense in some cases, and current status in others. See examples below. The post-discharge version of the scale still consisted of three dichotomous yes/no questions and twenty-five questions (rated 0-10) to contribute to the total score of 250.

*Question 1: " Do you think you were **ready** to go home? "*

*Question 17: " How well are you **handling the demands** of life at home? "*

*Question 25: " How much have your **physical abilities improved** since being at home?*

3.6.5.2 Secondary Outcome Measures

3.6.5.2.1 Balance Outcome Measure for Elder Rehabilitation

The Balance Outcome Measure for Elder Rehabilitation (BOOMER) is a valid and reliable tool used to measure balance and mobility in an elderly rehabilitation patient population (Haines *et al*., 2007; Kuys *et al*., 2011). The BOOMER is comprised of four sub-tests that pose a level of challenge to static and dynamic balance and mobility. The various components assessed in this test include:

- static stability in bipedal stance with feet together eyes closed (Clinical Test of Sensory Interaction and Balance) (Shumway-Cook and Horak, 1986)
- bilateral stance balance while reaching outside the base of support (Functional Reach Test) (Duncan *et al*., 1990)
- dynamic balance control during repeatedly stepping the foot on and off a block (Step Test) (Hill *et al*., 1996) and

- functional balance and mobility, including gait speed (Timed Up and Go Test) (Podsiadlo and Richardson, 1991)

Each component of testing has been independently validated (Di Fabio and Anacker, 1996; Duncan *et al*., 1992; Mercer *et al*., 2009; Shumway-Cook, Brauer and Woollacott, 2000). Each component is scored on a five-point scale (0-4) with higher scores indicating better performance. If a participant is unable to complete a task, a score of 0 is awarded. Total scores range from 0 to a maximum of 16 (Haines *et al*., 2007) as outlined in Table 3.2. A higher BOOMER score indicates greater levels of mobility, static and dynamic balance (Haines *et al*., 2007).

Table 3.2: Scoring for BOOMER (Balance Outcome Measure for Elder Rehabilitation)

Component	0	1	2	3	4
Step Test (Average no. of steps)	Unable	>0-5	>5-8	>8-12	>12
Timed Up & Go Test (s)	Unable	≥30	<30-20	<20-10	<10
Functional Reach Test (cm)	Unable	>0-15	>15-20	>20-30	>30
Static Standing Eyes Closed (s)	Unable	>0-30	>30-60	>60-<90	90

Haines, T., Kuys, S. S., Morrison, G., Clarke, J., Bew, P., & McPhail, S. (2007). Development and validation of the balance outcome measure for elder rehabilitation. *Arch Phys Med Rehabil, 88*(12), 1614-1621.

3.6.5.2.2 10 Meter Walk Test

The 10 Meter Walk Test (10MWT) is an objective measure of gait speed (Bohannon *et al.*, 1996). Gait speed has been investigated in the literature and has been linked to falls in the

elderly (Verghese *et al*., 2009; Quach *et al*., 2011; Callisaya *et al*., 2012; Beck Jepsen *et al*., 2022). Community-dwelling older adults were studied with results indicating that gait speed and falls are related in a parabolic function with those walking at speeds of >1.3m/s and <0.6m/s at higher risk of falls than those walking at 'normal' speeds 0.6-1.0m/s (Quach *et al*., 2011). Results identified that gait speed in excess of 1.3m/s are associated with outdoor falls, and a gait speed of less than 0.6m/s is associated with indoor falls (Quach *et al*., 2011). Gait speed has also been linked to better function, independence in self-care, independence in mobility, and quality of life (Paltamaa *et al*., 2007; Schmid *et al*., 2007).

The 10MWT has been proven valid and reliable (Wolf *et al*., 1999) and is used for the objective assessment of gait speed at both comfortable and maximum speeds (Bohannon *et al.*, 1996) which is an important aspect of discharge to community. Participants performed one walk test at each speed: comfortable and maximal pace over a 14m track, using usual mobility aids if required. Time was recorded during the middle 10m section to allow for acceleration and deceleration (Bohannon *et al.*, 1996).

3.6.5.2.3 Activities specific Balance Confidence Scale

The Activities specific Balance Confidence Scale (ABC) is a 16 item self-report questionnaire that has been shown to be valid and reliable and is used to examine balance confidence when performing a variety of everyday activities (Powell and Myers, 1995) (See Table 3.3). Each item is scored out of 100%. Scores for each item are added with a maximum possible total score of 1600, which is then divided by 16 to give an overall mean percentage out of 100 for confidence while performing the activities included (Powell and Myers, 1995).

In community dwelling older adults, balance confidence is a fall risk predictor (Cleary and Skornyakov, 2017) and is recommended to be routinely included in assessment. Total score ranges from 0% - 100%, with indications that a score of <67% may more likely to have a fear of falling (Reelick *et al*., 2009) and may be predictive of a future fall in community dwelling elderly (Lajoie and Gallagher, 2004). A cut off score of ≤58 has been shown to differentiate between fallers and non-fallers in community dwelling elderly (Moiz *et al*., 2017).

Table 3.3: Activities Specific Balance Confidence Scale

Instructions: For each of the following activities, please indicate your level of balance confidence by choosing one of the points on the scale below from 0% to 100%.

0% 10 20 30 40 50 60 70 80 90 100%
No Confidence Completely Confident

"How confident are you that you can maintain your balance and remain steady when you....

1. walk around the house? _____%
2. walk up or down stairs?_____%
3. bend over and pick up a slipper from the front of a closet floor? _____%
4. reach for a small can off a shelf at eye level? _____%
5. stand on your tip toes and reach for something above your head _____%
6. stand on a chair and reach for something?_____%
7. sweep the floor?_____%
8. walk outside the house to a car parked in the driveway?_____%
9. get into or out of a car?_____%
10. walk across a parking lot to the mall?_____%
11. walk up or down a ramp?_____%
12. walk in a crowded mall where people rapidly walk past you?_____%
13. are bumped into by people as you walk through the mall?_____%
14. step onto or off of an escalator while holding onto a railing?_____%
15. step onto or off an escalator while holding onto parcels such that you cannot hold onto the railing?_____%
16. walk outside on slippery footpaths?_____%

Powell, L.E., & Myers, A.M. (1995). The Activities-specific Balance Confidence (ABC) Scale. *J Gerontol A Biol Sci Med Sci, 50A*(1), M28-34.

Scoring results of the scale have been shown to identify those with a high level of physical function > 80%, moderate level of physical function 50%-80%, and low-level function < 50% (Myers *et al*., 1998). The ABC has also been shown to identify older adults at risk of falling and is predictive of a future fall (Lajoie and Gallagher, 2004). Normative data suggests the mean score for healthy community dwelling older adults is 79.89% (Huang and Wang, 2009). Prior research has illustrated that stroke survivors have a mean score of 68.3% (Botner, Miller and Eng, 2005) which indicates a moderate level of physical function but scores on the lower end which indicates a risk of falling.

Balance efficacy has shown correlations to activities of daily living (ADLs) (Tinetti *et al*., 1994), fall history (Belgen *et al*., 2006; Kulmala *et al*., 2007), and activity and participation (Schmid *et al*., 2012). The Activities Specific Balance Confidence Scale has illustrated excellent test-reliability in elderly populations (Powell and Myers, 1995) and stroke survivors (Botner, Miller and Eng, 2005). It also exhibits correlations with; gait speed, fall history, Geriatric Depression Scale, Functional Gait Assessment, Berg Balance Scale, and the Timed Up and Go in the elderly (Talley, Wyman and Gross, 2008; Wrisley and Kumar, 2010; Hatch, Gill-Body and Portney, 2003). The Activities Specific Balance Confidence Scale has been proven valid in two models and can be self-reported via questionnaire or administered via personal or telephone interview (Powell and Myers, 1995).

3.6.5.2.4 Modified Elderly Mobility Scale

The Elderly Mobility Scale is a 7-item tool (Smith, 1994a; Smith, 1994b), validated in the elderly in hospital settings. The Elderly Mobility Scale has been shown to have concurrent validity by correlating scores with the Functional Independence Measure and the Barthel Index (Smith, 1994). The Elderly Mobility Scale has been shown to predict those at risk of a fall (Spilg *et al*., 2003), with scores >14 indicating those who will manage at home (Smith, 1994a). Scores of 10-14 are representative of those who are borderline in terms of safe mobility and independence in activities of daily living, and scores of <10 are representative of those who will require help with mobility and activities of daily living (Smith, 1994a).

The Modified Elderly Mobility Scale (MEMS) is an extended version of the Elderly Mobility Scale and has been proven valid and reliable by correlating scores of ninety elderly patients with the Functional Independence Measure (Kuys and Brauer, 2006). The Modified Elderly Mobility Scale is an 8-item test of elderly mobility and function and includes transfers, standing balance, gait, times gait, functional reach, and stairs (See Table 3.4). A total of 23 is recorded by able older adults less scores under 19 are associated with an increased falls risk (Kuys and Brauer, 2006).

Table 3.4: Modified Elderly Mobility Scale

Activities	Score
Lying To Sitting 2 Independent 1 Needs help of 1 person 0 Needs help of 2+ people	
Sitting To Lying 2 Independent 1 Needs help of 1 person 0 Needs help of 2+ people	
Sit To Stand 3 Independent (<=3sec) 2 Independent (>3sec) 1 Needs help of 1 person (verbal or physical) 0 Needs help of 2+ people	
Stand 3 Stands w/out support & able to reach outside base 2 Stands w/out support but needs support to reach outside base 1 Stands but needs support 0 Stands only with physical assistance (Support means: needs to use upper limbs)	
Gait 3 Independent 2 Independent with frame 1 Mobile with walking aid but erratic or unsafe turning (needs occasional supervision) 0 Needs physical help to walk or constant supervision	
Timed Walk (10 metres from moving start) 3 Under 18sec 2 18 – 35sec 1 Over 35sec 0 Unable to cover 10metres	
Functional Reach 4 Over 16cms 2 8 – 16cms 0 Under 8cm or unable	
Steps 3 Independent without aid or rail 2 Independent with aid and/or rail 1 Needs 1 person help (verbal /physical) 0 Needs help of 2+ people	
Total	**/23**

Kuys, S.S., Brauer, S.G. (2006). Validation and reliability of the Modified Elderly Mobility Scale. *Australasian Journal on Ageing, 25*(3), 140-144.

3.6.5.2.5 Geriatric Depression Scale

The Geriatric Depression Scale – Short Form (GDS-15) is a shorter 15 item version of the original 30 item self-report scale that identifies risk of depression in the elderly (Sheikh and Yesavage, 1986; Yesavage, 1988). It is a dichotomous yes (1) or no (0) scale that asks simple questions to assess mood in older adults (Yesavage, 1988), see Table 3.5.

Original authors of the short form of the scale state that a score greater than 5 suggests depression (Sheikh and Yesavage, 1986). Later investigations around Geriatric Depression Scale cutoff scores report varying findings. While some authors report a score of >4 indicates a risk of depression (Brown and Schinka, 2005), others use a cutoff score of 3-4 to assess depression risk (de Craen *et al*., 2002).

The Geriatric Depression Scale has been validated in a geriatric population (Wancata *et al*., 2006) and maintains validity and reliability when administered over the phone (Burke *et al.,* 1997). It has also been shown to have negative associations with functional ability at discharge for both stroke and non-stroke patients in inpatient rehabilitation (Cully *et al.*, 2005). The Geriatric depression scale has also been used to screen rehabilitation admissions for depression risk (Hager, Brecht and Krause, 2017) and to explore the prevalence of depression in community dwelling older adults (Pracheth, Mayur and Chowti, 2013).

Table 3.5: The Geriatric Depression Scale – 15 Item Short Form Version

Instructions: Choose the best answer for how you felt over the past week. Note: when asking the patient to complete the form, provide the self-rated form (included on the following page).

No.	Question	Answer	Score
1.	Are you basically satisfied with your life?	YES / ***NO***	
2.	Have you dropped many of your activities and interests?	***YES*** / NO	
3.	Do you feel that your life is empty?	***YES*** / NO	
4.	Do you often get bored?	***YES*** / NO	
5.	Are you in good spirits most of the time?	YES / ***NO***	
6.	Are you afraid that something bad is going to happen to you?	***YES*** / NO	
7.	Do you feel happy most of the time?	YES / ***NO***	
8.	Do you often feel helpless?	***YES*** / NO	
9.	Do you prefer to stay at home, rather than going out and doing new things?	***YES*** / NO	
10.	Do you feel you have more problems with memory than most people?	***YES*** / NO	
11.	Do you think it is wonderful to be alive?	YES / ***NO***	
12.	Do you feel pretty worthless the way you are now?	***YES*** / NO	
13.	Do you feel full of energy?	YES / ***NO***	
14.	Do you feel that your situation is hopeless?	***YES*** / NO	
15.	Do you think that most people are better off than you are?	***YES*** / NO	
TOTAL			

Sheikh, J.I., & Yesavage, J.A. (1986). Geriatric Depression Scale (GDS): Recent evidence and development of a shorter version. *Clinical Gerontologist: The Journal of Aging and Mental Health, 5*(1-2), 165-173.

3.6.6 Procedures

Once informed consent was obtained, participants were provided study revocation of consent forms and contact details for the PhD Candidate. The consenting process included participation in the discharge assessment and permission for the researchers to follow-up the patient at one-month post-discharge for inclusion in Study 2 which will be outlined further on.

Participants were provided with non-identifiable envelopes which contained the questionnaires for self-reported measures; Modified Readiness for Hospital Discharge Scale (Weiss and Piacentine, 2006), the Activities specific Balance Confidence Scale (Powell and Myers, 1995) and the Geriatric Depression Scale (Yesavage, 1988). Participants were asked to return the questionnaires to the treating physiotherapist. Questionnaires were labelled with a numeric code prior to delivery to the participants so they could be matched with the demographic information and consent forms. A folder was left in the rehabilitation gym for treating physiotherapists to place the returned documents in and the PhD Candidate collected these weekly.

Clinical and demographic information was retrieved from the geriatric and rehabilitation database by the PhD Candidate and recorded on a standardized form. Data retrieved included: length of stay, age, gender, primary diagnosis, clinical group, and living situation anticipated on discharge. The demographic form was numbered as were the consent forms to ensure consistency of data collection. All information was collated by the PhD candidate and was not shown to or used by the treating physiotherapist.

The treating physiotherapist completed the functional balance and mobility outcome measures undertaken at discharge to home as part of the routine discharge assessment as per standard protocol in the geriatric rehabilitation unit. This assessment included the Balance Outcome Measure for Elder Rehabilitation (Haines *et al*., 2007), 10 Meter Walk Test (Bohannon, Andrews and Thomas, 1996), and the Modified Elderly Mobility Scale (Kuys and Brauer, 2006). All data were entered into an excel database for analyses.

Participants who consented to be followed-up were contacted by phone at one-month post-discharge to determine continued engagement in the study. At this stage participants were screened and those who had passed away, been readmitted to hospital or moved into a family members house or residential aged care facility were excluded from further follow up. Patients deemed eligible and willing to participate were mailed the study questionnaires, that had again been numerically coded, to their preferred address. Participants were asked to complete the questionnaires independently and were provided with a reply-paid envelope to return the completed questionnaires; the Modified Readiness for Hospital Discharge Scale, Activities Specific Balance Confidence Scale and the Geriatric Depression Scale. Participants who had not returned the questionnaires received reminder phone calls at two and four weeks post initial phone call.

Participants who were unable to be contacted by phone on the first attempt, were called two further times at varying times of day. Alternate phone numbers were tried, such as those for family and carers, however, if no contact was made with participants after three attempts they were deemed lost to follow up.

Participants who continued with Study 2 were also provided with a standardised form requesting a self-report of mobility aids required in the home and community, assistance required in the home and community, maximum mobilising distance, falls suffered since discharge, follow-up services received, follow-up therapy received, and social participation in clubs and activities such as attending church weekly. The returned information was collated and entered into an excel database for analysis.

3.6.7 Statistical Analysis

Descriptive data for the cohort at two time points was entered into an excel database. SPSS computer software Version 21 was used to analyse the quantitative data collected. Descriptive analyses were used to describe clinical characteristics of the cohort admitted to this study and to report all primary and secondary outcome measures.

In Study 1, a Pearson r correlation was undertaken to determine associations between readiness for discharge (MRHDS), balance confidence (ABC Scale), depression risk (GDS) and functional balance and mobility measure (BOOMER, 10MWT, MEMS).

For Study 2, paired t-tests were performed to determine any differences in readiness for discharge (MRHDS), balance confidence (ABC scale), and depression risk (GDS) at two time points; discharge and one-month post-discharge.

Participants were grouped based on MRHDS score; those who scored $\geq$7 (high readiness) and those who scored <7 (low readiness). Paired t-tests were used to explore differences in balance, gait, functional mobility, balance confidence and depression between the two MRHDS groups.

3.7 Qualitative Studies

Three qualitative studies were undertaken within this research program. Studies 3 and 4 are presented together as both involved focus groups of experienced and novice physiotherapists respectively. Study 5 of this doctoral program is presented separately and used semi-structured interviews of patients previously involved in Studies 1 and 2. Methods of each study are detailed below.

3.7.1 Study 3 and 4: Clinical Reasoning of Experienced and Novice Physiotherapists: Focus Groups

3.7.1.1 Aims

a) The aim of Study 3 was to examine the clinical reasoning and decision-making process of experienced physiotherapists during the discharge process from rehabilitation to home in community for an elderly rehabilitation population.

b) The aim of Study 4 was to examine the clinical reasoning and decision-making process of novice physiotherapists during the discharge process from rehabilitation to home in community for an elderly population.

3.7.1.2 Study Design

A focus group of experienced physiotherapists (Study 3) and novice physiotherapists (Study 4) with semi-structured questions.

3.7.1.3 Participants

Participants included in Study 3 and Study 4 were registered and practicing physiotherapists who were working in the Geriatric and Rehabilitation Unit (GARU) at the Princess Alexandra Hospital, Brisbane, Queensland.

Participants of Study 3 had to satisfy the following;

- Be registered and practicing physiotherapists
- Be working in the geriatric and rehabilitation unit
- Have at least 5 years experience working in rehabilitation

Physiotherapy students or allied health assistants or physiotherapists working elsewhere in the participating facility were not eligible for inclusion in this study.

Participants included in Study 4 had to satisfy the following;

- Be registered and practicing physiotherapists,
- Be working in the geriatric and rehabilitation unit, and
- Have less than three months experience working in rehabilitation

Physiotherapy students, allied health assistants or novice physiotherapists working elsewhere in the participating facility were not eligible for inclusion in this study.

3.7.1.4 Recruitment

A flyer promoting the study was posted in the physiotherapy gym and office in the geriatric rehabilitation unit. Physiotherapy staff were invited to contact the candidate if interested in participating in a focus group. The candidate spoke with all applicants who enquired verbally or via email about completing the study and determined who met the eligibility criteria. Participants were advised of the nature of the study and, after verbally agreeing to participate, were provided with a study information sheet, participant informed consent form, and revocation of consent forms. Participants were informed that participation in the study, or declining to participate, would in no way affect their employment at the hospital and that their personal identification would remain confidential.

3.7.1.5 Procedures

Upon expression of interest to participate in Study 3 or Study 4, physiotherapists completed the consenting process and were briefed as to the nature of the study. A date and time that suited all participants in each group (experienced or novice physiotherapists) was arranged. A quiet room in the geriatric and rehabilitation unit was used for each focus group and all focus groups were facilitated by the candidate.

Each focus group was planned to include six to eight physiotherapists. This sample size was chosen as appropriate based on recommendations made in Braun & Clarke (2013).

A semi-structured interview format, including open-ended and leading questions, was utilised to elicit rich information from the therapists. The aim was to add to the findings from

both earlier quantitative studies from the patients' perception of discharge and the various aspects of readiness found in the Readiness for Hospital Discharge Scale including physical status, knowledge, coping, and expected support. To ensure consistency of the information and data collected, the same semi-structured interview guide was used for both groups (experienced physiotherapists, novice physiotherapists) (See Figure 3.1).

Open Questions:

1) What do you think about as you prepare someone for discharge?
2) What are the factors that positively influence your clinical decision making?
3) What barriers or negatively factors influence your clinical decision making?
4) How do you determine whether or not someone is prepared for discharge to home?
5) What factors do you formally assess prior to discharge?
6) What factors to you informally assess prior to discharge?

Leading Questions:

7) What are the physical factors that you consider for patient discharge?
8) What about the physical environment do you consider?
9) What services do you consider?
10) What are the social supports that you consider?
    a. How do you determine who will receive social support?
11) What are the follow up therapy services that you consider?
    a. How do you determine who will receive follow up therapy?
12) Do you consider emotional status for patient discharge?
13) Do you consider psychological/cognitive status or presentation for discharge?

Figure 3.1: Physiotherapist Interview Guide

3.7.1.6 Thematic Analysis

The six phases of thematic analysis based on the works of Braun & Clarke (2019) were employed to gain a richer understanding of the clinical reasoning process, and identify the critical issues considered by experienced physiotherapists (Study 3) and novice

physiotherapists (Study 4) for discharge planning. These included *familiarisation* with the data set through the methods above, *coding* of the data set by two independent researchers*, searching for themes* by clustering together codes, *reviewing themes* to determine what the themes elicited fit with the data set, *defining and naming themes*, and *writing the report*.

To ensure rigour and validity of the process (Morse *et al*., 2015; Morse *et al*., 2002), each focus group was recorded with audio and video for ease and integrity of transcription (Asan and Montague, 2014). The PhD Candidate who is a female physiotherapist, had not met the participants prior, and whose first language is English, transcribed the audio-video recordings verbatim (McMullin, 2021). Recordings were watched during the initial transcription phase, and then repeatedly while completing the transcription to ensure accuracy of the process (McMullin, 2021). Audio-video recordings and transcripts were uploaded to a secure and password protected central site. The PhD Candidates supervisors, who both hold PhDs and have experience in conducting and analysing qualitative research, then reviewed the audio-video recordings and verbatim transcriptions to ensure accuracy of the transcription and robustness of the data collection process (Mays and Pope, 1995; Cypress, 2017).

The PhD Candidate and an independent researcher who is experienced in qualitative analysis, undertook the six phases of thematic analysis as described above. The PhD Candidate performed transcription of the recordings which were cross checked by a supervisor as detailed above, and these transcriptions were used by both parties to investigate the data set. Primary coding was undertaken by the PhD Candidate and

independent researcher without any collaboration. After primary coding, a secondary review of the data was undertaken together by both the candidate and independent researcher which then then further identified over-arching themes and sub-themes based in similarity of the comments and repetition of the same concepts. Themes and sub-themes were discussed with research supervisors who also reviewed interview transcripts to ensure accuracy of data interpretation and robustness of the data being reported. A consolidated criteria for reporting qualitative research (COREQ) (Tong, Sainsbury, and Craig 2007) checklist was also followed and completed to ensure rigorousness of the analysis procedure. See Appendix 3.

3.7.2 Study 5: Patient Interviews

3.7.2.1 Aims

The aim of Study 5 was:

a) To gain a richer understanding of patients' perspectives of the discharge process from rehabilitation to home
b) To examine two different time points (pre-discharge and post-discharge) and determine whether patients' thoughts and feelings change once home in community

3.7.2.2 Study Design

Individual face to face interviews with semi-structured questions.

3.7.2.3 Participants

Participants for Study 5 were a purposive sample of participants from the cohort recruited to Studies 1 and 2. Participants were rehabilitation in-patients, aged 60 and over, with a rehabilitation length of stay greater than three weeks, who had intact cognition, were being discharged to home in the community and had adequate English to understand the interview questions. Any patients who did not provide informed consent, had dementia or Alzheimer's disease, or were being discharged to nursing home or care facility were excluded from the study.

3.7.2.4 Recruitment

Participants were asked during consenting for Studies 1 and 2 if they would like to be involved in interviews and encouraged to expand on the information gleaned from the questionnaires completed. The PhD candidate discussed participation in the interviews with the patient who was provided with a verbal explanation within 48 hours prior to discharge. If agreeable, patients were provided with an information form and revocation of consent form.

3.7.2.5 Procedures

Participants were informed of the face-to-face interview process and advised that the first interview would be performed within 48 hours of discharge to home. This interview took place in a quiet area in the geriatric rehabilitation unit. Participants were advised that the physical testing of discharge outcome measures would still be performed as per usual procedure and participation in the study would in no way affect their ongoing treatment or discharge plan.

Participants were advised that all information collected would be de-identified and would not be divulged to their treating physiotherapist or anyone outside the research team. Participants were also informed that any future use of the data for the purposes of this thesis or publication would use de-identified data and their participation would remain confidential.

A quiet area was secured, and tripod with camera was set up. Participants were brought to the area by the PhD Candidate one at a time. Participants were advised of, and consented to being, video and audio recorded for increased rigour of the process and ease of transcription for the PhD Candidate (McMullin, 2021). A semi-structured interview, including open ended and leading questions, was conducted by the PhD Candidate with each participant pre-discharge (See Figure 3.2).

Open Questions:

1) Do you feel that you are ready to go home?
2) What has helped you feel positive about going home?
3) What do you feel has been a barrier or negative about going home?
4) Do you think all of your questions have been answered to your satisfaction?

Leading Questions:

5) Do you feel physically prepared to manage at home?
6) Has your functional ability changed since your stay in rehabilitation?
    a. 4 Wheeled Walker, Single Point Stick, Manual Wheelchair?
7) Do you feel emotionally prepared to manage at home?
8) Are you confident in your mobility, balance and function?
9) Will you have support at home?
    a. Family, shopping, cleaning, showers?
10) Do you think you will have any difficulties?
11) Do you think your quality of life has changed since your stay in rehabilitation?

Figure 3.2: Pre-Discharge Patient Interview Guide

At one-month post-discharge, participants completed individual face to face semi-structured interviews. Post-discharge a similar line of questioning was used as pre-discharge, however the questions were re-phrased to reflect the post-discharge time frame. See Figure 3.3.

Open Questions:

1) Do you feel that you **were** ready to go home?
2) What **helped** you feel positive about going home?
3) What do you feel **was** a barrier or negative about going home?
4) Do you think all of your questions **were** answered to your satisfaction **prior to discharge**?

Leading Questions:

5) How are you managing physically at home?
6) Has your functional ability changed since your stay in rehabilitation?
    a. 4 Wheeled Walker, Single Point Stick, Manual Wheelchair?
7) How are you coping emotionally?
8) Are you confident in your mobility, balance and function?
9) Do you fear you will have a fall?
10) How much support do you have at home?
    a. Family, shopping, cleaning, showers?
11) Have you had any difficulties since going home?
    a. Stairs, driving, self-cares
12) Do you think your quality of life has changed since your stay in rehabilitation?

Figure 3.3: Post-Discharge Patient Interview Guide

3.7.2.6 Thematic Analysis

Both pre-discharge and post-discharge interviews were collected with audio and video recordings (Asan and Montague, 2014) by the PhD Candidate who is a female physiotherapist and had not met the participants prior. Using both audio and video recording and the PhD Candidate, who is a native English speaker, performing the

transcription added to the rigour of the data analysis process (Morse *et al.,* 2015; Morse *et al.,* 2002). Recordings were watched during transcription to ensure accuracy of the process (McMullin, 2021). Transcripts and recordings were again uploaded to a secure and password protected central site the research team had access to. The PhD Candidate's supervisors, who both hold PhDs and have experience in conducting and analysing qualitative research, reviewed the audio-video recordings and verbatim transcriptions to ensure accuracy of the transcription and robustness of the data collection process (Mays and Probe, 1995; Cypress, 2017) prior to thematic analysis commencing.

Thematic analysis was performed to gain a better understanding of patients' perceptions of the discharge process, and understand their viewpoint (Castleberry and Nolen, 2018). Data were identified, analysed and themes within the data reported (Braun and Clarke, 2006). Qualitative thematic analysis was completed using the five steps outlined by Yin's book, *Qualitative Research from Start to Finish* (Yin, 2016). Steps taken included; compiling, disassembling, reassembling, interpreting, and concluding (Yin, 2016).

Compiling the data consisted of transcription from audio-video recordings into verbatim transcripts by the PhD Candidate who is a native English speaker (Sutton and Austin, 2015; McMullin, 2021). Disassembling of the data was performed by both the PhD Candidate and an independent researcher who completed primary coding without any collaboration (Sutton and Austin, 2015; Austin and Sutton, 2014). Reassembling of data was performed by the PhD Candidate and a supervisor by taking the primary coded data and putting it into context to create themes (Yin, 2016), thematic hierarchies were employed to elicit the themes and sub-themes identified (Castleberry and Nolen, 2018). Interpretation of the data

and subsequent themes sought to satisfy the five qualities of interpretation including; completeness, fairness, accuracy, value, and credibility (Yin, 2016). Thematic patterns were identified and a thematic map was created as seen in Chapter 8. Conclusions were then drawn from the themes and their interpretations. The consolidated criteria for reporting qualitative research (COREQ) (Tong, Sainsbury and Craig, 2007) checklist was again followed and completed to ensure rigorousness of the analysis procedure.

Chapter 4: Study 1

Are patient perceptions of readiness for hospital discharge associated with physical performance, balance confidence and depression at discharge from rehabilitation?

4.1 Preamble

This chapter was Study 1 in a multi-methods program of research. Older adults in rehabilitation settings often have comorbidities and present a challenge when discharge planning. Ensuring patients perceive themselves to be ready for discharge to home has previously been shown to have a direct impact on successful discharge and the risk of unplanned readmission. There existed a need to explore the perceptions of older adults in a geriatric rehabilitation setting to determine if they felt prepared to return to their home in community. Also of interest was whether a relationship existed between perceived readiness for hospital discharge and physical capacity, balance confidence and risk of depression.

4.2 Abstract

Background: Patient perceived readiness for discharge to home may be indicative of the ability to manage at home after rehabilitation but has only been investigated in acute hospital wards.

Aims: To examine self-reported perceived readiness for discharge of older adults discharging to home and identify if high or low perceived readiness revealed differences in balance, gait, functional mobility, balance confidence and depression risk.

Design: Prospective observational cohort study

Participants: 101 older adults undergoing inpatient rehabilitation (average age 75.6 SD10.0 years; 56.9% females) with varying diagnoses (neurological, ortho-geriatric, and de-conditioning).

Procedures: Treating physiotherapists completed outcome measures within 72-hours prior to discharge. Participants completed questionnaires independently within 48-hours prior to discharge.

Results: Overall mean MRHDS score was 7.28 (SD1.32) with 84% reporting high readiness for discharge to home. Those who perceived themselves to be less ready for discharge (16%) had lower perceived physical status and expected more support after discharge. This group also had lower scores for balance, function, balance confidence and higher risk of depression.

Conclusion: Most patients perceive that they are ready for home when discharged. When people report a low perceived readiness for discharge, both their physical status and expected support at home may require further attention during preparation of patients for discharge to home.

4.3 Introduction

Patient preparation for discharge from hospital is an important aspect of discharge planning (Weiss and Piacentine, 2006). In geriatric rehabilitation units, a multidisciplinary team works together with patients to set goals, provide individual assessment and treatment and regular review for discharge planning (RACP, 2012). Physiotherapists use reliable and valid outcome measures to measure functional status on admission to and at discharge from rehabilitation to determine if patients have sufficient balance, gait and functional mobility prior to discharge to manage the demands of the home and community environment (RACP, 2012). However, assessment of readiness for hospital discharge is not typically conducted prior to discharge. With the increasing pressures on the health care system and a trend towards discharging patients home at an earlier stage of recovery (Dellasega and Fisher, 2001; Lincoln *et al.*, 2004; AIHW, 2019; Coffey *et al.*, 2019), it is imperative that rehabilitation populations are physically and mentally prepared for the demands of life at home to reduce the risk of unplanned readmission (Glans *et al.*, 2020). Along with physical performance, patient perceptions of readiness for discharge and of the rehabilitation process may be an important indicator of ability to manage at home after rehabilitation (Galvin *et al.*, 2017; Gledhill *et al.*, 2021).

Studies undertaken with patients in acute hospital wards revealed those who felt better prepared for discharge home had positive outcomes including better ability to cope (Weiss and Piacentine, 2006), less dependency on family and friends for support (Weiss and Piacentine, 2006), and fewer hospital readmissions (Weiss *et al.*, 2007; Bobay *et al.*, 2010; Coffey and Mccarthy, 2013). Higher self-reported readiness for discharge has also been positively associated with increased knowledge about caring for oneself, future medical

treatments, and increased support in the community (Brent, 2013). Patient perceived readiness for discharge has not been explored in rehabilitation populations despite suggestions that this is the most at-risk population for failed discharge. (Considine *et al*., 2020). Risk factors for unplanned readmissions within 28 days include being aged ≥65 years, with comorbidities or chronic disease and staying more than two days in hospital (Considine *et al.*, 2020). These factors describe the typical rehabilitation cohort so it would be prudent to determine whether their perceptions of self-reports on readiness for discharge may be related to outcomes such as balance, gait and functional mobility. It is reasonable to suggest that people with better physical performance would be likely to feel more prepared to manage in the home and community. Inpatient rehabilitation, at least in Australia, comprises a mixed population including people with neurological and ortho-geriatric disorders, as well as those who are de-conditioned following prolonged illness and hospitalization (Kuys *et al.*, 2016). Differences in physical performance have been noted across clinical diagnostic groups undergoing inpatient rehabilitation (Guedes *et al.*, 2011; Kuys *et al.*, 2016). However, it is not known if different clinical groups would report different levels of readiness for discharge to home.

Other non-physical factors such as balance confidence and mood may also be related to patient perceived readiness for discharge. Balance confidence has been associated with physical function (Talley *et al.*, 2008), balance (Hatch *et al.*, 2003) and mobility in older adults (Kuys *et al*., 2014; Kuys *et al.*, 2015) being discharged from acute care. Balance confidence also appears to vary across diagnostic groups of older adults at discharge from inpatient rehabilitation (Kuys *et al.*, 2015). Similarly, mood could also influence perceived readiness for discharge as depression has been associated with functional decline (Mehta *et*

al., 2002), reduced balance confidence (Hull *et al.*, 2013) and higher falls risk (Tinetti *et al.*, 1986; Covinsky *et al.*, 2001; Stalenhoef *et al.*, 2002; Anstey *et al.*, 2008; Deandrea *et al.*, 2010) in adults undergoing rehabilitation.

4.4 Aims

Thus, the primary aim of this study was to examine self-reported perceived readiness for discharge of older adults at discharge from rehabilitation to home in the community and identify if high or low perceived readiness revealed differences in balance, gait, functional mobility, balance confidence and depression risk.

4.5 Methods

4.5.1 Design

A prospective cohort study examined self-reported readiness for discharge of older adults from inpatient rehabilitation to home in the community.

4.5.2 Participants

Potential participants were older adults undergoing inpatient rehabilitation for a variety of disorders including neurological, ortho-geriatric, and de-conditioning related to their general health, medical diagnosis or following a surgical procedure. A sample of convenience was recruited over a two-year period from three wards in a single rehabilitation unit (total beds = 76) of a large tertiary hospital. Patients with a Functional Independence Measure Cognitive

(FIM-C) score of over 25 (>25/35) - indicating intact basic cognition (Rabadi *et al.*, 2008) - and who met inclusion criteria were invited to participate by their treating physiotherapist. Participants had to be aged over 60 years, participated in hospital-based rehabilitation for at least three weeks with sufficient English to complete questionnaires and provide informed consent, be walking any distance with or without a mobility aid and discharge destination was their usual residence in the community. Patients with a diagnosis of dementia or Alzheimer's disease, and those discharging to a residential care facility, nursing home, or for full care in family members' homes, were excluded. Those requiring a wheelchair as the primary means of mobility were also excluded.

4.5.3 Procedures

Physiotherapists working in the rehabilitation unit were informed about the study aims and eligibility criteria for recruitment. Individualised treatment plans and decisions regarding patient discharge were not altered regardless of study inclusion or exclusion. Eligible participants were provided with a verbal explanation and written information pertaining to the study.

When patients were deemed ready for discharge, their treating physiotherapist completed standardised outcome measures testing within 72-hours prior to discharge as is routine for all rehabilitation patients being discharged. Participants completed questionnaires independently where possible within 48-hours prior to discharge, however, assistance was provided if required by the primary researchers. Participant demographics including age, gender, living situation, presenting condition (neurological, ortho-geriatric, general de-

conditioning), mobility aids used, home modifications required, follow up therapy, and domestic community services were also recorded.

4.5.4 Outcome Measures

The primary outcome measured was patient perceived readiness for hospital discharge and was assessed using the Readiness for Hospital Discharge Scale (RHDS) (Weiss and Piacentine, 2006) modified with author permission. Secondary measures were standard measures of balance, gait and functional mobility at discharge to home, satisfaction with rehabilitation and self-reported balance confidence and depression risk.

The Readiness for Hospital Discharge Scale (RHDS) is a 23-item self-report questionnaire investigating patient perceived readiness for hospital discharge in four sub-scales encompassing personal status, knowledge, coping, and expected support (Weiss and Piacentine, 2006) and has been described in Section 3.6.5.1 Primary Outcome Measure. The RHDS has been validated for use with a range of adult populations including medical-surgical patients (Weiss and Piacentine, 2006; Weiss *et al.*, 2007; Bobay *et al.*, 2010), older adults with hip fracture (Brent, 2013; Coffey and McCarthy, 2013). Items are scored on a 0 (low) -10 (high) horizontal visual analog scale. Average scores for each sub-scale and total score were dichotomized into high readiness ($\geq$7), or low readiness (<7) (Weiss *et al.*, 2007; Brent, 2013). Four additional questions regarding were included (Box 4.1), three of these were also scored on a visual analogue scale to determine participants satisfaction with the

rehabilitation process as a component of a quality control study and the final was a two-part dichotomous yes/no question.

1. How much has the **rehabilitation team** contributed towards helping you to feel prepared for return to life at home?
2. How much do you feel your **physical abilities** will improve once you are home?
3. Do you feel the rehabilitation team have **sufficiently** involved your family / carers in preparation for your return home÷
4. a. Do you have a **Home Exercise Program?**
   b. Are you **able to complete it?**

Box 4.1: Rehabilitation specific questions asked prior to discharge

Physical performance measures included reliable and valid balance, gait and functional mobility measures. These measures have been described in detail in Section 3.6.5.2 Secondary Outcome Measures. Balance and gait were assessed with the Balance Outcome Measure for Elder Rehabilitation (BOOMER) (Haines *et al.*, 2007). The BOOMER comprises four components of feet together eyes closed (Shumway-Cook and Horak, 1986), Step Test (Hill, 1996), Functional Reach Test (Duncan *et al.*, 1990), and Timed Up and Go Test (TUG) (Podsiadlo and Richardson, 1991) with higher scores indicating better balance (Haines *et al.*, 2007). Gait speed was assessed with the 10-metre walk test (10MWT) (Bohannon *et al.*, 1996) which is a valid and reliable (Bohannon, 1997) measure used in rehabilitation settings (Bohannon, 1997; Flansbjer *et al.*, 2005; Hollman *et al.*, 2008). Functional mobility was determined using the Modified Elderly Mobility Scale (MEMS) (Kuys and Brauer, 2006) and

the motor component of the Functional Independence Measure (FIM-M) (Rabadi *et al.*, 2008). The MEMS has demonstrated validity against the Functional Independence Measure (FIM) total scores and FIM motor (FIM-M) scores in older adults undergoing inpatient rehabilitation (Kuys and Brauer, 2006). The FIM-M is a 13-item scale measuring assistance required to complete a range of motor activities (Granger *et al.*, 1993).

Balance confidence was measured with the Activities specific Balance Confidence Scale (ABC) which is a 16-item self-report questionnaire (scored 0-100%) examining balance confidence to perform everyday activities (Powell and Myers, 1995). This reliable (Powell and Myers, 1995) and valid (Wrisley and Kumar, 2010) tool has positive high associations with mobility, balance performance, and physical function in elderly populations (Kuys *et al.*, 2015). Depression was screened using the short form 15-item Geriatric Depression Scale (GDS-S) (Sheikh *et al.*, 1983), a validated, dichotomous yes/no scale that indicates risk of depression (Wancata *et al.*, 2006) in the older adult with a score of five or above (Sheikh *et al.*, 1983).

4.5.5 Analysis

Data analysis was performed using Statistical Package for Social Sciences (SPSS) version 21, with a p-value set at 0.05 for significance. Total and sub-scale RHDS scores were calculated for the total sample. Participants were dichotomized according to total (and sub-scale) RHDS scores into those with high perceived readiness (RHDS mean total score ≥7) and low perceived readiness for discharge (RHDS mean total score <7) (Weiss and Piacentine, 2006). Paired t-tests were used to explore differences between the two groups in balance, gait,

functional mobility, balance confidence, and depression. Differences in high vs low readiness were also explored within the three clinical groups (neurological, ortho-geriatric, and de-conditioning). Spearman rho correlational analyses were used to examine the relationship between readiness for hospital discharge (total and sub-scale scores), balance, gait, functional mobility, balance confidence and depression risk. Missing data was minimal and deemed missing at random, so was accounted for by the use of means.

4.6 Results

One hundred and one participants with an average age of 75.6 years (SD10.0) years were recruited (Table 4.1), based on power and sample size estimates, over a two year period between 2010 – 2012. Just over half the group were females and the ortho-geriatric clinical group was the largest participant group. The average length of stay in rehabilitation was eight weeks, and just over one-third were returning home to live alone. Approximately two-thirds of participants were prescribed mobility aids and further therapy while very few were involved in family conferences.

Table 4.1: Participant demographic characteristics and preparations for discharge from rehabilitation process

Characteristic	(n=101)
Gender, n females (%)	58 (56.90)
Age (years), mean (SD)	75.59 (9.96)
Length of stay (days), mean (SD)	48.73 (43.05)
Clinical diagnosis	
General de-conditioned, n (%)	31 (30.69)
Ortho-geriatric, n (%)	40 (39.60)
Neurological, n (%)	30 (29.70)
Living situation	
Alone, n (%)	38 (37.3)
Family, n (%)	60 (58.8)
Other, n (%)	3 (3.90)
Family conference, n (%)	6 (5.90)
Attended patient education, n (%)	32 (31.40)
Mobility aids recommended, n (%)	67 (65.70)
Home modifications recommended, n (%)	40 (39.20)
Follow up therapy, n (%)	72 (70.60)
Home assist services, n (%)	48 (47.10)

4.6.1 Patient perceived readiness for discharge

Figure 4.1 represents mean RHDS scores for each sub-scale and for the total tool. Overall, mean total score for the RHDS was greater than seven indicating that on average all participants perceived they were ready for discharge.

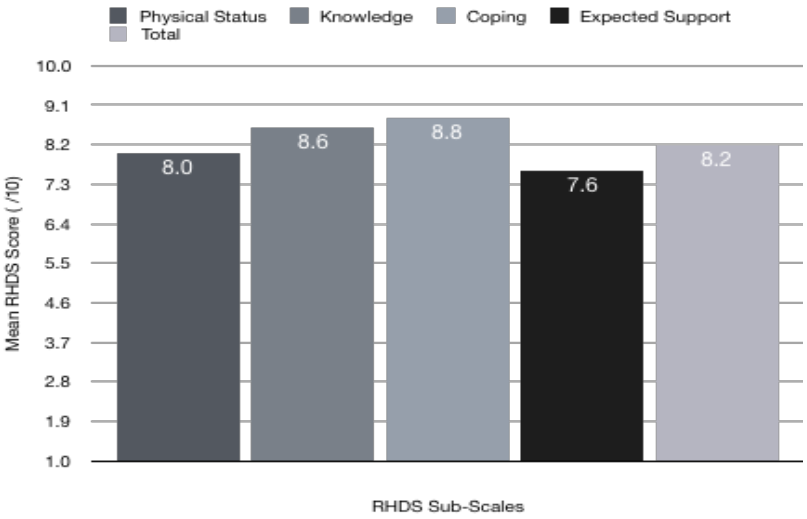

Figure 4.1: Mean Readiness for Discharge Scale (RHDS) scores for total and sub-scale scores

When participants were dichotomized into high or low perception of readiness for discharge, based on RHDS total scores, 84% reported a high perceived readiness. Significant differences were found between the two groups for physical status, with those reporting high readiness for discharge demonstrating better FIM-M scores and balance self-confidence as well as lower depression scores (Table 4.2). In the domain of expected support, those participants who scored less than 7 were expecting to receive less support on discharge and scored higher on measures of physical function including balance, functional mobility and balance confidence.

Table 4.2: Mean (SD) RHDS scores and statistical between group p value difference in balance, gait, functional mobility, balance confidence and depression risk for those reporting high readiness (≥7) or low readiness (<7) for discharge.

RHDS Cutoff of 7	BOOMER (/16)	10MWT-F (timed, s)	10MWT-S (timed, s)	MEMS (/23)	FIM Motor (/91)	ABC (/100%)	GDS (/15)
Physical Status							
< 7	8.52 (4.17)	14.17 (5.02)	18.88 (7.17)	19.52 (3.89)	**74.61 (10.54)**	**53.48 (13.88)**	**3.74 (2.81)**
≥ 7	10.41 (4.11)	13.07 (6.41)	16.44 (8.28)	19.96 (3.84)	**80.01 (9.34)**	**65.93 (23.97)**	**2.24 (2.15)**
(sig)	(0.058)	(0.529)	(0.209)	(0.632)	**(0.020)**	**(0.026)**	**(0.008)**
Knowledge							
< 7	8.30 (4.99)	12.69 (6.49)	16.18 (9.57)	18.30 (5.95)	**71.90 (12.70)**	53.19 (19.76)	3.60 (2.87)
≥ 7	10.12 (4.08)	13.38 (6.14)	17.18 (7.97)	20.00 (3.54)	**79.44 (9.25)**	64.24 (22.95)	2.47 (2.33)
(sig)	(0.194)	(0.755)	(0.727)	(0.186)	**(0.021)**	(0.168)	(0.162)
Coping							
< 7	9.30 (4.37)	14.37 (5.88)	17.68 (8.66)	20.20 (2.20)	75.40 (11.77)	55.50 (12.37)	**4.00 (2.49)**

RHDS Cutoff of 7	BOOMER (/16)	10MWT-F (timed, s)	10MWT-S (timed, s)	MEMS (/23)	FIM Motor (/91)	ABC (/100%)	GDS (/15)
≥ 7	10.04 (4.18)	13.16 (6.203)	16.96 (8.03)	19.82 (3.98)	79.12 (9.60)	64.10 (23.48)	**2.43 (2.34)**
(sig)	(0.596)	(0.582)	(0.791)	(0.769)	(0.259)	(0.259)	**(0.048)**
Expected Support							
<7	**11.39(3.46)**	12.66(4.15)	15.09(5.38)	**21.33(1.67)**	81.15(7.67)	**69.61(20.22)**	2.30(2.18)
≥ 7	**9.25(4.35)**	13.63(6.98)	18.02(8.99)	**19.13(4.37)**	77.56(10.59)	**60.00(23.32)**	2.73(2.52)
(sig)	**(0.016)**	(0.510)	(0.094)	**(0.006)**	(0.091)	**(0.050)**	(0.408)
Total Score							
< 7	11.00 (3.80)	13.60 (4.33)	15.77 (5.70)	21.23 (1.75)	79.06 (9.11)	59.74 (14.55)	3.47 (2.18)
≥ 7	9.76 (4.24)	13.24 (6.47)	17.31 (8.48)	19.58 (4.08)	78.68 (10.03)	63.95 (24.09)	2.40 (2.40)
(sig)	(0.267)	(0.849)	(0.480)	(0.105)	(0.889)	(0.491)	(0.094)

- *Bold items indicate significance between groups with a P value <0.05.*

Abbreviations: RHDS (Readiness for Hospital Discharge Scale), BOOMER (Balance Outcome Measure for Elder Rehabilitation), 10MWT-f (10 Meter Walk Test-Fast), 10MWT-S (10 Meter Walk Test-Slow), MEMS (Modified Elderly Mobility Scale), FIM Motor (Functional Independence Measure Motor), ABC (Activities Specific Balance Confidence Scale), GDS (Geriatric Depression Scale).

4.6.2 Perceived readiness of clinical groups

Participants in the neurological clinical group were significantly younger (68.33 years (SD14.43), $p < 0.001$), and stayed longer in hospital (65.00 days (SD57.45), $p = 0.041$) than the ortho-geriatric and general de-conditioning groups.

No other significant differences were found between the clinical groups who had completed rehabilitation and were discharging to home. There were no significant differences between the high and low perceived readiness groups in balance, gait, functional mobility, balance confidence or depression risk for clinical groups. Thus, data were pooled for further analysis.

4.6.3 Associations between readiness for discharge and outcome measures

Table 4.3 illustrates the association between RHDS sub-scale and total scores and balance, gait, functional mobility, balance confidence, and depression risk measures. Significant associations were found primarily in the physical status domain, with moderate correlations (Portney, 2000) found between physical status, depression risk and balance confidence. Balance confidence and depression risk were also weakly correlated (Portney, 2000) with most sub-scales except for expected support.

Table 4.3 Rho correlations (p value) between readiness for hospital discharge by sub-scale and balance, gait, functional mobility, balance confidence, and depression risk

RHDS	BOOMER	10MWT-F	10MWT-S	MEMS	FIM Motor	ABC	GDS
Physical Status	**0.202**	**-0.220**	**-0.232**	0.115	**0.194**	**0.452**	**-0.408**
(sig)	**(0.045)**	(0.053)	**(0.023)**	(0.254)	**(0.055)**	**(<0.001)**	**(<0.001)**
Knowledge	-0.015	0.007	0.037	-0.028	0.124	**0.227**	**-0.330**
(sig)	(0.886)	(0.950)	(0.725)	(0.781)	(0.225)	**(0.027)**	**(0.001)**
Coping	0.095	-0.080	-0.095	0.129	0.158	**0.257**	**-0.265**
(sig)	(0.348)	(0.488)	(0.359)	(0.201)	(0.121)	**(0.012)**	**(0.008)**
Expected Support	**-0.240**	0.025	0.136	**-0.264**	-0.108	-0.144	0.019
(sig)	**(0.017)**	(0.826)	(0.190)	**(0.008)**	(0.288)	(0.163)	(0.852)
Total Score	0.075	-0.046	0.025	-0.094	0.026	0.095	**-0.229**
(sig)	(0.462)	(0.690)	(0.812)	(0.353)	(0.799)	(0.356)	**(0.023)**

- Bold items indicate significance between groups with a P value <0.05

Abbreviations: MRHDS (Modified Readiness for Hospital Discharge Scale), BOOMER (Balance Outcome Measure for Elder Rehabilitation), 10MWT-f (10 Meter Walk Test-Fast), 10MWT-S (10 Meter Walk Test-Slow), MEMS (Modified Elderly Mobility Scale), FIM Motor (Functional Independence Measure Motor), ABC (Activities Specific Balance Confidence Scale), GDS (Geriatric Depression Scale).

4.6.4 Rehabilitation focused questions

The majority of participants were highly satisfied with their preparation for discharge (9.39/10), potential to improve (8.76/10), and involvement of family and carers in the discharge planning process (8.79/10), even though only 6% of participants had a family conference. Weak, significant correlations (rho ranges from 0.207 – 0.483; $p < 0.001$) were identified between the RHDS total and sub-scale scores and satisfaction with preparation for

discharge, potential to improve physically, and family involvement during rehabilitation (Table 4.4).

Table 4.4: Rho correlations (p value) between rehabilitation focused questions

Questions	Physical Status	Knowledge	Coping	Expected Support	Total Score
How much has the **rehabilitation team** contributed towards helping you to feel prepared for return to life at home?	0.235 (0.022)	0.315 (0.002)	0.414 (<0.001)	0.207 (0.044)	0.341 (<0.001)
How much do you feel your **physical abilities** will improve once you are at home?	0.247 (0.015)	0.396 (<0.001)	0.458 (<0.001)	0.231 (0.023)	0.394 (<0.001)
Do you feel the rehabilitation team have **sufficiently** involved your family / carers in preparation for your return home?	0.237 (0.025)	0.483 (<0.001)	0.397 (<0.001)	0.226 (0.032)	0.338 (<0.001)

4.7 Discussion

Overall findings of this study indicate that at discharge from inpatient rehabilitation to home, 84% older adults perceived they were ready to go home. Those reporting higher perceived readiness performed better on functional testing, had higher balance confidence, and lower depression risk before discharge. The high levels of readiness for discharge are comparable to other findings for patients in an acute hospital setting (Bull *et al.*, 2000; Weiss *et al.*, 2007; Coffey and McCarthy, 2013) and an orthopaedic unit (Brent, 2013). Additionally, when participants were asked the dichotomous question 'are you ready to go home?', the majority of participants in this study reported they were ready for discharge from rehabilitation to home. This suggests that regardless of setting or reason for admission, patients have gainful insight as to when they are ready for discharge. Involving patients in multidisciplinary planning and goal setting as soon as patients are admitted to rehabilitation is an important strategy that is effective for discharge planning (Shepperd *et al.*, 2010). Another aspect of patients' perceptions of readiness for discharge to consider, could include their satisfaction with the rehabilitation process or their desire to be out of hospital and return home to familiar environments and social supports. While the correlations between the additional questions regarding rehabilitation and the RHDS sub-scales were significant, they were not strongly associated. The reason for this is not known, and may warrant further investigation as to why readiness for discharge is not more strongly associated with satisfaction with the rehabilitation process.

Differences were found when participants were dichotomized into high or low readiness for discharge. Those with higher readiness rated higher in the domain of physical status and had a lower expectation of support. Older adults with higher perceived physical status

demonstrated better performance on physical function tests including the FIM Motor and BOOMER. Additionally, it is likely that such patients would expect less support. Interestingly, gait speed did not differ between those with higher and lower readiness for discharge. This was unexpected, as gait speed has been associated with survival regardless of age or gender (Studenski *et al.*, 2011). Participants in this study walked with an average gait speed of 1.33 m/s, which is above the normative data (0.9 m/s to 1.3 m/s) for community elderly (Graham *et al.*, 2010) and according to Quach *et al*., (2011) may indicate increased risk of an outdoor fall. The gait speeds noted in these participants may not have reflected differences in perception in perceived readiness for discharge, but a follow-up study may better determine if gait speed and perceived abilities reflected the participants actual readiness for discharge once at home and the risk of a future fall.

Those who reported higher readiness also had higher levels of perceived balance confidence. This may occur because in rehabilitation units, patients practice completing activities of daily life the safe confines of the hospital under the supervision of clinicians. This may contribute to increased confidence to manage everyday tasks independently once back in community, or conversely may very well change once patients are home alone. Perceived balance confidence has been shown to be positively associated with functional ability (Kuys *et al.*, 2015). Thus, when reports of low balance confidence are identified during discharge planning, patients may be at risk of a less desirable outcome and out-patient rehabilitation may be an important consideration and may be required to optimize post-discharge outcomes.

The current study also found that those with higher physical status and readiness scored lower on risk of depression. While an inverse relationship between physical activity and depression has been shown previously (Van Gool *et al.*, 2007), the relationship between perceived readiness for discharge and risk of depression has not previously been reported. Depressive symptoms have been related to higher hospital readmission and service utilisation in the elderly (Kartha *et al.*, 2007; Strunin *et al.*, 2007; Mudge *et al.*, 2011; Pederson *et al.*, 2016). These findings suggest that those who feel less physically prepared for discharge may require review before discharge home to ensure that all steps are taken to reduce the risk of depression at home. It may also be beneficial to follow-up patients post-discharge to determine whether the risk of depression changes once patients are in their home environment (Pierluissi *et al.*, 2012; Brown *et al.*, 2020).

Of particular interest is the sub-scale of expected support in which those who reported higher levels of expected support, scored lower on physical function, balance and balance confidence measures. Similar results were identified in an earlier study reporting on acute care patients (Bobay *et al.*, 2010). Those discharged home from medical wards with lower reported readiness for discharge, required more post-discharge support with activities of daily living, medication management, and household activities than their counterparts who reported higher readiness for discharge. These findings suggest that clinicians may need to specifically practice everyday tasks with and without family members who may / may not be available to assist on return to home.

Unexpectedly, reports of perceived readiness for discharge did not differ between groups when this cohort was examined by clinical diagnostic group. Differences in perceived

readiness between the clinical diagnostic groups was expected due to the varying functional ability including balance, physical function, balance confidence (Kuys *et al.*, 2015), gait speed and FIM (Kuys *et al.*, 2016) between different clinical groups undergoing rehabilitation. Our findings could possibly be explained by the fact that, regardless of diagnosis, patients may have attained a similar level of function prior to discharge as is the goal of rehabilitation. Patient involvement in discharge planning, physical preparation, and levels of expected support may have also played a part in patients from different diagnostic groups feeling equally prepared for return to home.

Only 6% of the study participants had a formal family conference; this was unexpected due to the complex nature of clinical discharge planning in rehabilitation. However, these numbers are unlikely to reflect informal conferencing that occurs on a regular basis. Formal family conferences are likely only required for complex discharge situations. Family conferencing and task practice however, appear to be essential strategies when the triad of poorer physical function, lower balance confidence to complete everyday tasks and increased levels of expected support are defined near discharge. It may be that such patients expect that on discharge high levels of support will be provided by formal or informal means and this provides them with confidence and readiness for discharge home despite their physical performance capabilities. This relationship requires further investigation but there is reason to suggest that the Readiness for Hospital Discharge Scale may be a useful additional measure to include as part of discharge planning. In particular, attention should be paid to those who report higher levels of expected support prior to discharge to home when this is not going to be available as they may not be prepared functionally to succeed at home. With time often being an issue in a busy rehabilitation

environment, it is thus important to note that there are now two abbreviated versions of the RHDS. One is a 17-item scale (Mabire *et al.*, 2015) and the second is an 8-item scale (Weiss *et al.*, 2014) which may better suit rehabilitation settings especially when attempting to complete the scale within 24-48 hours immediately prior to discharge.

Strengths of this study include the sampling of various clinical diagnostic groups, as well as including objective physical measures and subjective self-report measures related to preparation for readiness, balance confidence and mood. Limitations to this study include the sample being one of convenience from a single site with not all rehabilitation participants being involved. These findings, however, appear generalisable as the study population appears to be similar to those found in rehabilitation populations in various rehabilitation units in Queensland (Haines *et al.*, 2007; Kuys *et al.*, 2014; Kuys *et al.*, 2016) and more broadly Australia (Bernhardt *et al.*, 1998; Van Den Berg *et al.*, 2016). One limitation to generalisation of results related to the inclusion of participants who were cognitively sound and willing to consent to participation. Additionally, patients were only asked about their perceptions of readiness for discharge immediately prior to hospital discharge. It would be advantageous to follow patients up after discharge to determine whether their perceived readiness prior to discharge is associated with balance confidence and depression risk once settled at home, as well as providing insight as to whether they were actually ready to return home to community.

4.8 Conclusion

This study identified that older adults undergoing rehabilitation who report higher readiness for discharge tend to have better balance, functional mobility, balance confidence and a lower risk of depression at discharge to home. Patients with lower readiness have a higher expectation of support by family and both formal and informal services post-discharge. This is important and suggests that while balance, mobility and function may appear to be at an optimal level for discharge, self-perceived readiness could be related to balance confidence and needs to be considered during the discharge planning process. Ultimately, patients with lower perceived readiness for discharge are important to identify prior to returning home to optimise a successful discharge and integration into home and community.

Chapter 5: Study 2

A Retrospective View of Patient Perceptions of Readiness for Hospital Discharge: Were They Really Ready?

5.1 Preamble

This Chapter is a follow-up to Study 1 (Chapter 4) to determine whether older adults' perceptions about readiness for discharge change one-month post-discharge from rehabilitation. Study 1 found that older adults discharging from rehabilitation to home in community rate their overall readiness for discharge as high. Those who scored a lower level of expected support post-discharge, also scored higher on outcomes of physical function, balance and mobility. Similarly, those who scored higher on functional outcome measures also reported higher levels of balance confidence and a lower risk of depression. The cohort fell below the cutoff for risk of depression. However, despite feeling confident about their physical status and readiness to discharge, balance confidence and gait speeds indicated they were still at risk of a future fall. Study 2 of this research program was conducted to further explore whether older adults in a rehabilitation setting tend to overestimate their physical capabilities, amount of expected support post-discharge, and overall readiness at discharge to home.

5.2 Abstract

Background: Older adults returning home from rehabilitation units present a complex challenge for discharge planning. At discharge, older adults rate their readiness for discharge as high. It is not known if this changes during the first month that older adults are home.

Aims: To determine whether patient perceptions of readiness for hospital discharge to home in community change at one-month follow-up compared to discharge from rehabilitation (baseline). Secondary aims were to determine any differences in balance confidence and depression risk post-discharge.

Design: Prospective longitudinal cohort study

Participants: Sixty-five (n=65) older adults (average age 75.1 SD ± 10yrs) who had discharged to home after undergoing inpatient rehabilitation for a variety of diagnoses. Participants had an average length of stay of 44 days (SD ± 39 days) and 60% were female.

Procedures: Patients recruited for Study 1 were asked to participate in a post-discharge review at one-month post-discharge. The Readiness for Hospital Discharge Scale (RHDS) was used to investigate retrospective perceptions of perceived readiness for discharge. Activities Balance Confidence Scale (ABC) and Geriatric Depression Scale (GDS) were also completed. Pre-discharge and post-discharge scores were compared to determine change over time.

Results: Patients in rehabilitation overestimated their readiness for discharge. Significant differences were observed in perceived readiness for discharge at pre-discharge (83% reported being ready) and post-discharge (66% reflected they actually were ready at discharge). Scores of physical status decreased post-discharge (p=0.002) as did the amount

of expected support (p=0.000). No significant change was observed for balance confidence and risk of depression, though these both improved.

Conclusion: Older adults returning home from rehabilitation units may overestimate their readiness for discharge, physical function and the amount of support they expect to receive once home. The risk of depression may also increase once older adults are back to home in the community.

5.3 Introduction

In geriatric rehabilitation, complex discharge planning is required to ensure successful discharge to home and reduce the incidence of unplanned readmission (Coffey *et al.*, 2019; Considine *et al.*, 2020). Readiness for discharge is assessed by physiotherapists (Jette *et al.*, 2003; AFRM, 2012; ANZPHYSIO, 2015) and determined by a multidisciplinary team who review physical outcomes for balance, mobility and function, environmental set-up, and stability of medical condition (Pashley *et al.*, 2010; Matmari *et al.*, 2014). The benefits of including patients in the discharge planning process have been observed (WHO, 2013; Erlang *et al.*, 2021; Gane *et al.*, 2022), however, older adults' perceptions of their readiness for discharge in relation to their physical function and capacity has yet to be explored in depth.

Perceived readiness for hospital discharge from acute medical surgical (Bobay *et al.*, 2010; Coffey and McCarthy, 2013) and orthopaedic wards (Brent and Coffey, 2013) has been formally examined using self-reported outcomes (Weiss *et al.*, 2007). The post-discharge period has been investigated to determine post-discharge coping and service utilization as

well as comparing patients' perspectives of readiness with unplanned readmission rates (Fitzgerald Miller *et al.*, 2008; Weiss *et al.*, 2010; Weiss *et al.*, 2019). Retrospective reports of readiness for discharge from the patients' perspectives has not been reported. This gap in the literature is concerning due to the incidence of comorbidities and risk of readmission with elderly patients returning to live at home in community (Hines *et al.*, 2006; Gruneir *et al.*, 2018; Werner *et al.*, 2019; Glans *et al.*, 2020).

The risk of a future fall or unplanned readmission to hospital is also a pertinent concern. Previous evidence reports positive relationships between balance confidence (Lajoie and Gallagher, 2004; Cleary and Skornyakov, 2017), depression (Deandrea *et al.*, 2010; Hull *et al.*, 2013) and falls, thus it is important to explore patients' perceptions of these factors which may influence discharge. Results of Study 1 indicated that balance confidence scores were low at discharge, and patients discharging home may be at risk of a future fall (Cleary and Skornyakov, 2017). The patient cohort as a group were not deemed at risk of depression at discharge, however it is known that elderly populations are often at risk of depression especially when residing alone in community (Blazer *et al.*, 2001; Demyttenaere *et al.*, 2004; Moss *et al.*, 2012; Padayachey, 2017; Padayachey *et al.*, 2017).

Older adults with poor health, living in the community with home care, and polypharmacy have been shown to have greater risk of unplanned readmission (Glans *et al.*, 2020). Further evidence has illustrated that multi-pharmacy (Picker *et al.*, 2015; Basnet *et al.*, 2018), comorbidities or chronic disease (Li *et al.*, 2015), age $\geq$ 65 years with a hospital stay of more than two days and health service use in the preceding 6 months (Considine *et al.*, 2019) are known predictors of hospital readmission. The cohort found in rehabilitation units often

consists of older adults with comorbidities, multiple medications and returning home to live in the community with or without formal supports (Di Libero *et al.*, 2001; Zhang *et al.*, 2022). Informal support may exist in the form of family and caregivers (Themessl-Huber *et al.*, 2007), while formal support may occur in the form of government assistance. Australian government reports indicate that in the 2019-2020 financial year, over one million older adults received support from aged care services in Australia (AIHW, 2021). The Commonwealth Home Support Program is an entry-level service to help people remain independent in the home and community and was used by 840,000 older adults in the 2019-2020 financial year (AIHW, 2021). During the same financial year, the Home Care Packages Program was used by 175,000 older adults to provide a tailored, coordinated package of care to enable people to remain living at home (AIHW, 2021).

As the elderly population continues to grow, it is likely that more support will be required to assist older Australians to continue living at home in community. The importance of identifying factors that may lead to avoidable readmissions is becoming apparent (Van Walraven *et al.*, 2011) as the population of older adults increases. Though the majority of patients report being ready for discharge, it is important to ensure that, once home in community, patients manage the transition from hospital to home and are not readmitted unnecessarily (Howard-Anderson et al., 2016).

5.4 Aims

Study 2 aimed to expand on the findings from Study 1 and investigate the post-discharge period. The primary aim was to determine whether patient perceptions of readiness for

hospital discharge to home in community changed when assessed at one-month follow-up compared to discharge to home from rehabilitation (baseline). Secondary aims included investigating whether physical status, expected support, balance confidence and depression risk changed in the first month home post-discharge.

5.5 Methods

5.5.1 Design

A prospective longitudinal cohort study was used to examine retrospective self-reported readiness for discharge of older adults from an inpatient rehabilitation unit to home in the community.

5.5.2 Participants

Eligible participants were those recruited for Study 1 who had been discharged home to the community. Inclusion criteria for this study were the same as Study 1 (Chapter 4). Participants needed to have adequate English to complete questionnaires, be able to mobilise independently with or without a mobility aid, have intact basic cognition (FIM-C >25/35, (Rabadi *et al.*, 2008)) and not have a diagnosis of Alzheimer's disease or dementia. Additionally, participants in Study 2 needed to have participated in rehabilitation for three weeks or more, be discharged to their usual residence in community and be willing to participate in this follow-up timepoint. Those whose were discharged to residential care, nursing home, family member's homes, or whose primary means of mobility was a wheelchair were excluded.

5.5.3 Procedures

Participants were recruited to this study during recruitment for Study 1. At one-month post-discharge, participants were phoned to determine ongoing consent to participate in the study. If unable to contact participants on the first attempt, two more phone calls were attempted to confirm ongoing participation in the study. Once participants indicated consent for follow-up, a package was mailed to them at their preferred address. The package included a reply-paid envelope, an information collection form asking about equipment, modifications to the home, falls, exercise tolerance, follow up therapy, and services. Post-discharge outcome measures including the Readiness for Hospital Discharge Scale, Activities specific Balance Confidence Scale and Geriatric Depression Scale were also included in the follow-up package. If the envelope wasn't received back within two weeks of posting, participants were called to verbally complete the documentation and questionnaires. Participants were again called three times in an attempt to reduce attrition. If no contact was made after the third attempt, participants were deemed lost to follow up.

5.5.4 Outcome Measures

The primary outcome measure used in this study was a modified version of the Readiness for Hospital Discharge Scale (RHDS) (Weiss and Piacentine, 2006; Weiss *et al.*, 2007). Secondary measures were the Activities Specific Balance Confidence Scale (ABC) (Myers *et al.*, 1998) and Geriatric Depression Scale (GDS) (Yesavage, 1988).

The RHDS 23-item self-report questionnaire was used in Study 1 and modified with the addition of four rehabilitation-based questions. The RHDS used post-discharge was modified to reflect current and past tense appropriate to each individual question (See Table 5.1). The RHDS has been used in full length versions as well as short-form versions as a predictor of readmission to hospital in acute settings (Weiss *et al.*, 2014) but has not yet been used as a retrospective tool to compare patients' perceptions of readiness for hospital discharge from a retrospective perspective prior to this program of research. The four domains of self-perceived readiness of physical status, knowledge, coping, and expected support and the rehabilitation questions added remained consistent for the post-discharge assessment. A score of equal to or greater than 7 (≥ 7) were deemed to have high readiness.

Table 5.1 Pre-Discharge and Post-Discharge Readiness for Hospital Discharge Scale Examples

Pre-Discharge Questions	Post-Discharge Questions
1. As you think about your discharge from the hospital, do you believe you are **ready** to go home as planned?	1. As you think about your discharge from the hospital, do you believe you were **ready** to go home as planned?
2. How physically **ready** are you to go home?	2. How physically **ready** were you to go home?
3. How would you describe your **pain** or **discomfort** today?	3. How would you describe your **pain** or **discomfort** today?
4. How would you describe your **strength at discharge** today?	4. How would you describe your **strength** today?
9. How much do you **know about caring for yourself** after you go home?	9. How much do you **know about caring for yourself** now that you're home?
10. How much do you **know about** taking care of your **personal needs** (for example: washing, dressing, toileting, eating) after you go home?	10. How much do you **know about** taking care of your **personal needs** now that you're home?
15. How much do you **know about what happens next** in your follow-up medical treatment plan after you go home?	15. How much do you **know about what happens next** in your follow-up medical treatment plan now?
21. How much **help** will you have with **your personal care** after you go home?	21. How much **help** have you had with **your personal care** now that you're home?
25. How much do you feel your **physical abilities** will improve once you are at home?	25. How much do you feel your **physical abilities** have improved now that you are at home?
26. Do you feel the rehabilitation team have **sufficiently** involved your family / carers in preparation for your return home?	26. Do you feel the rehabilitation team **sufficiently** involved your family / carers in preparation for your return home?

The Activities Balance Confidence scale (ABC) was used in a 16-item format to determine balance confidence among the cohort prior to discharge and again at one-month post-discharge. Total scores range from 0% - 100%, with indications that a score of <67% may be more likely indicative of a fear of falling (Reelick *et al.*, 2009) and may be predictive of a future fall in community dwelling elderly (Lajoie and Gallagher, 2004). A cut off score of ≤58 has been shown to differentiate between fallers and non-fallers in community dwelling elderly (Moiz *et al.*, 2017). Scores can be categorised into one of three groups to identify functional balance confidence (<50% low functioning, 50%-80% moderate functioning, >80% high functioning (Myers *et al.*, 1998).

The Geriatric Depression Scale-15 (GDS-15) is a shorter version of the original 30-item scale and is used as a self-report tool used to identify those at risk of depression (Sheikh and Yesavage, 1986) with recommended cutoff scores of 4-6 (Pocklington *et al.*, 2016). It is a 15-item dichotomous yes (1) or no (0) scale and has been validated in a geriatric population (Wancata *et al.*, 2006).

5.5.5 Analysis

Data analysis was performed using Statistical Package for Social Sciences (SPSS) version 25, with a p value set at 0.05 for significance. Scores were calculated for all sub-scales and for the total scale for the RHDS. Participants were dichotomised into two groups consisting of those who scored seven or greater (≥7) or less than seven (<7) on the total RHDS score and each of the raw sub-scale scores. Pre-discharge and one-month post-discharge follow up scores were analysed. Chi square tests and cross tabs were used to determine changes in

frequencies for each sub-scale confidence, and depression. Paired t-tests were used to determine any changes in balance confidence, perceived readiness for discharge, and risk of depression when compared pre- and post-discharge respectively. Missing data was minimal and was deemed missing at random, this was accounted for using imputation methods.

5.6 Results

Of the 101 participants originally recruited (Study 1), 65 older adults were able to be followed up at one-month post-discharge. Participants were lost to follow up for a variety of reasons including mortality, readmission to hospital, change of living arrangements (ie: moved into residential care facility) and those who declined further participation or were unable to be contacted. Approximately 64% of the original Study 1 participant cohort were able to be included in this cohort (See Table 5.2).

Participant characteristics for both pre - and post-discharge groups are presented in Table 5.2. Of the 65 participants followed up, 60% were female, with a mean age of 75.1 years (SD 10) and an average length of stay of 44 days (SD39). Forty-three percent (n = 28) of participants returned home to live alone while the remainder lived either with family or carers. Physiotherapists originally referred 72% of patients for follow up therapy and 69% of patients followed up received therapy post-discharge.

Table 5.2: Participant demographics for Study 1 and Study 2 participants

	Pre-Discharge (n=101)	Follow Up (n=65)
Gender, female, n (%)	57 (57)	39 (60)
Age, years, mean (SD)	75 (10)	75 (10)
LOS, days, mean (SD)	48 (42)	44 (39)
Condition Group, n (%)		
General De-conditioning	31 (31)	18 (27)
Ortho-geriatric	40 (39)	27 (42)
Neurological	30 (30)	20 (31)
Living Situation, n (%)		
Alone	40 (39)	28 (43)
Family	60 (59)	35 (54)
Carer	2 (2)	2 (3)
Family Conference, n (%)		
Yes	6 (6)	4 (6)
Education, n (%)		
Yes	32 (31)	21 (32)
Equipment, n (%)		
Yes	67 (66)	40 (62)
Home Modifications, n (%)		
Yes	40 (39)	19 (29)
Follow Up Therapy, n (%)		
Yes	73 (72)	45 (69)
Community Services, n (%)		
Yes	49 (48)	28 (43)

5.6.1 Readiness For Hospital Discharge

Significant differences were observed between groups who scored $\geq$7 or <7 on RHDS sub-scales and the total scale at discharge and at follow up one-month post-discharge (Table 5.3). When examining total perceived readiness for discharge, cross tabulation analysis showed that prior to discharge 54 (83%) participants reported high levels of readiness. At

follow up only 43 (66%) participants reported they actually were ready to go home at the time of discharge. Those who scored a lower level of expected support post-discharge, also scored higher on outcomes of physical function, balance and mobility. Analysis comparing the means for each RHDS sub-scale was not statistically different for those who remained at home and those lost to follow up at one month. Expected support neared significance at P > 0.051.

Table 5.3: Pre-discharge and post-discharge differences for high readiness and low readiness participant groups

Outcome Measure		Pre-Discharge (n = 65)	Post-Discharge (n = 65)	Chi-Square
RHDS				
Physical Status	≥ 7 Cutoff (n)	**48 (73.8%)**	**27 (41.5%)**	**12.05 (0.001)**
(Sub-Scale 1)	< 7 Cutoff (n)	**17 (26.1%)**	**38 (58.4%)**	
Knowledge	≥ 7 Cutoff (n)	56 (86.1%)	57 (87.6%)	**4.27 (0.039)**
(Sub-Scale 2)	< 7 Cutoff (n)	9 (1.4%)	8 (12.3%)	
Coping	≥ 7 Cutoff	58 (89.2%)	59 (90.7%)	0.24 (0.625)
(Sub-Scale 3)	< 7 Cutoff	7 (1.1%)	6 (9.2%)	
Expected Support	≥ 7 Cutoff	**40 (65.5%)**	**26 (40.0%)**	**5.70 (0.017)**
(Sub-Scale 4)	< 7 Cutoff	**23 (35.4%)**	**37 (56.9%)**	
Total Scale	≥ 7 Cutoff	**54 (83.1)**	**43 (66.1%)**	2.64 (0.104)
	< 7 Cutoff	**11 (16.9)**	**22 (33.8%)**	

- *Bold items indicate significance between groups with a P value <0.05.*

Scores for the means of the total scale and each sub-scale were examined with paired t-tests. Findings indicate that reports of physical status, expected support and overall perceived readiness decrease once participants returned home to community (Table 5.4). Significant decreased were noted in both physical status ($p = 0.001$) and expected support ($p = 0.017$) post-discharge. Total mean RHDS scale score decreased post-discharge from 202 to 190 ($p = 0.001$) (Table 5.4). No significant differences were observed with regards to sub-scales of coping or knowledge.

5.6.2 Activities specific Balance Confidence Scale and Geriatric Depression Scale

No significant differences were observed for the ABC or GDS scales between discharge and 1-month follow up (Table 5.4). Cross tabulation results indicate that 25 participants scored above 3 in the GDS pre-discharge, while 31 scored above 3 post-discharge (Chi-square 5.00, $p = 0.025$). There were more older adults at risk of depression after being home in the community for one month.

Table 5.4: Mean (SD) score and Paired t-test significance for the Readiness for Hospital Discharge Scale, Geriatric Depression Scale and Activities Specific Balance Confidence Scale.

Outcome Measure			Pre-Discharge Score (SD)	Post-Discharge Score (SD)
Readiness for Hospital Discharge Scale	**Physical Status (Sub-Scale 1)**	Score	**55.40 (9.6)**	**50.60 (12.2)**
		T-Test (sig)	**0.002**	
	Knowledge (Sub-Scale 2)	Score	67.83 (10.5)	67.89 (10.2)
		T-Test (sig)	0.927	
	Coping (Sub-Scale 3)	Score	34.83 (5.1)	34.40 (5.2)
		T-Test (sig)	0.611	
	Expected Support (Sub-Scale 4)	Score	**21.45 (9.5)**	**14.58 (10.9)**
		T-Test (sig)	**0.000**	
	Total Scale	Score	**202.14**	**190.94**
		T-Test (sig)	**0.001**	
Geriatric Depression Scale		Score	2.61 (0.3)	3.05 (0.3)
		T-Test (sig)	0.277	
Activities-specific Balance Confidence Scale		Score	64.79% (2.7)	63.13% (3.0)
		T-Test (sig)	0.585	

5.7 Discussion

When examining older adults at one-month post-discharge home from rehabilitation, 66% of participants assessed at follow up reported actually being ready for discharge at the time of discharge. These findings indicate that fewer people reported they were in fact ready for discharge once patients had returned to home in the community. Additionally, the number of people reporting high levels of expected support decreased significantly once home in the community. This may be because once home, older adults realized that their expectations of support from both formal and informal sources was overestimated and they didn't receive as much assistance as expected. The implications of these findings are an overestimation of readiness for discharge immediately prior to returning home.

Additionally, the cohort also reported lower levels of physical status at one-month post-discharge than they did at baseline (discharge). Whether this is because patients had encountered difficulties upon discharge or weren't managing as well physically as anticipated remains to be investigated. The amount of support expected once back at home in community dropped by in excess of 30% once patients were back at home. The discrepancies that may come to light of discharging home to live with family may be of benefit to explore further in future studies, given the risk factors associated with living alone versus with family (Hershkovitz *et al.*, 2007). Implications exist in terms of patient overestimation of support and resources that will be available, versus what is actually available post-discharge. Results also show that patients self-reports of coping and knowledge about future medical plans and medications did not change post-discharge. This suggests that multidisciplinary rehabilitation teams are preparing patients for discharge in these areas. Also of note, was the risk of depression slightly increasing post-discharge. More

patients scored above a score of three on the GDS once home, suggesting the cohort was trending towards being at risk for depression once home in community.

This study was the first to use the RHDS in its modified form retrospectively to assess perceived readiness for hospital discharge once patients were home in community for one month. When investigating overall perceived readiness for discharge approximately half of the patient cohort changed their minds and reported they weren't actually ready to go home at the time of discharge. This is a concerning finding and suggests that elderly patients may be overly optimistic and possibly unrealistic in their perceptions of readiness for discharge. A growing body of evidence supports the findings of this study that indicate older adults may overestimate their physical abilities (Butler *et al.*, 2011; Gabbard *et al.*, 2011) which may be associated with accidental falls (Fujimoto *et al.*, 2015).

When examining readiness for discharge in further depth, older adults' self-reports of physical status were lower post-discharge when compared to the scores obtained pre-discharge from inpatient rehabilitation. It could be hypothesised that once home where physical capabilities were challenged, patients realised they weren't as highly functioning as previously believed. Physiotherapists encourage functional practice of tasks required for activities of daily living in home and the community (Siemonsma *et al.*, 2018; Perry *et al.*, 2019), and perform functional assessments to determine capacity (Thonnard and Penta, 2007). Though it may be reasonable to hypothesise that once back home in the community patients may be challenged to confidently perform the activities to function independently in community (Bimou *et al.*, 2021). Inpatient rehabilitation is a supportive environment with a multidisciplinary team working in a patient-centered interdisciplinary manner to assist and

encourage the patient to achieve their own personal goals (Mills *et al.*, 2017; Wade, 2020). Though once back in the community, the patient may be required to perform tasks of daily living independently and without the support provided in rehabilitation units.

Of concern when discharge planning was the reported lack of support for older adults once back home in the community. Prior to discharge participants in this study reported expectations of support both formal and informal once they returned home. However, the level of support provided upon discharge was 33% lower than expected. A concerning observation was patients who reported less discharge readiness and decreased physical status were expecting increased levels of support upon discharge. These findings were consistent when explored again post-discharge, with patients who reported lower physical status expecting more support.

Decreased physical capacity in the absence of support required once home in community is an aspect of the discharge process that clinicians need to be aware of. It may be hypothesised that patients about to discharge home who overestimate their readiness, physical capabilities and the amount of support they will receive are eager to return to home and familiar surroundings (Wiles *et al.*, 2012). The amount of support required and expected is something that may be beneficial to address in family conferences to ensure all stakeholders have realistic expectations to support the transition to home (Bucknall *et al.*, 2020).

When examined pre- and post-discharge, scores for knowledge and coping did not change. This is a positive finding and suggests that patients report acceptable levels of knowledge

regarding their medical treatment and management at discharge and continue to feel confident about their treatment plans post-discharge. A recent systematic review suggests that patients' knowledge about their hospitalisation was poor, and tend to overestimate knowledge (Sommer *et al.*, 2018). While extensive verbal education from health care professionals during hospitalisations is beneficial, having simplified discharge instructions has been shown to empower patients (Desai *et al.*, 2021). The findings of this current study, that knowledge and coping do not decrease post-discharge, are positive and suggest that the rehabilitation unit is likely providing quality education. It may be hypothesised that because patients feel knowledgeable about their medical treatment plans, they're capable of coping once discharged to community.

Balance confidence scores were low pre-discharge and remained low post-discharge. Interestingly, the patient cohort reported feelings of readiness for hospital discharge and high levels of self-reported physical status despite scoring low on balance confidence to attempt everyday tasks. The associations between decreased balance confidence and fear of falling (Reelick *et al.*, 2009) and prediction of future falls (Lajoie and Gallagher, 2004; Cleary and Skornyakov, 2017) are of concern for this cohort and may suggest they are collectively at risk of a future fall; though this was not investigated in this current study.

The combination of decreased balance confidence and high reported physical status is of concern and warrants questioning whether patients who are overestimating their physical capabilities are at greater risk of a fall when home. Also worth contemplating is the triad of those with low reported physical status, low balance confidence and high levels of expected support, especially under the context of depression risk post-discharge. Are these patients

aware of their functional limitations, low in confidence and then becoming at risk of depression when the support they were expecting does not materialise and they're not physically capable of managing in the home?

There are several limitations of this study that must be acknowledged. The sample recruited was one of convenience due to the workload and work area of the PhD Candidate. The exclusion criteria of cognitive impairment, dementia, alzheimers disease, and those who were not mobile with or without an aid decreased the available pool of patients. The attrition rate of 36% was undesirable; however, as the study took place in a geriatric rehabilitation unit with an elderly population likely to have comorbidities, the loss of participants during follow up was not unexpected. When investigated, the group lost to follow up was not significantly different from those that were followed up in terms of age, length of stay, or functional ability pre-discharge. This suggests that the findings could be generalised to the entire cohort and the missing data would have been unlikely to influence the findings.

These findings are important and relevant to physiotherapists treating in rehabilitation environments as emphasis has historically been placed on physical function, balance and mobility (Thonnard and Penta, 2007). The importance of understanding patients' overestimation of readiness for discharge, physical status and knowledge about their hospitalisation (Sommer *et al.*, 2018) may assist in the complex discharge planning required (Patrick *et al.*, 2001; Bauer *et al.*, 2009). Also important is understanding over expectations of support in the community. The negative ramifications of decreased levels of support combined with the risk of depression in the community dwelling elderly post-discharge may

have a detrimental effect on the discharge process and could result in failed discharge for social more than physical reasons. It would be of benefit to investigate in depth patients' perceptions of the discharge process to determine whether there are commonalities among those who reported successful discharges. Another informative exercise may be to explore the clinical reasoning from physiotherapists' perspectives to determine if there is uniformity in the discharge planning and assessment process.

5.8 Conclusion

Older adults returning to home in community post-discharge from geriatric rehabilitation tend to overestimate their overall readiness, physical status and the amount of support they expect to receive. Balance confidence may be at a sub-optimal level even at discharge. And the risk of depression slightly increased once home in the community. Clinicians need to be aware of these factors when clinically reasoning for discharge of older adults.

Chapter 6: Study 3

Clinical Reasoning of Experienced Physiotherapists: A Focus Group

6.1 Preamble

Results of the first two quantitative studies in this thesis indicated that older adults discharging to home were overestimating their readiness for discharge. Over estimations of physical function and the amount of support expected were observed. The risk of depression also appeared to slightly increase once back home in the community. Because of the overestimation of support, and physical function in combination with potential increased risk of depression, a need arose to examine the clinical reasoning behind physiotherapists' discharge planning practices to determine the factors considered by physiotherapists formally and informally prior to discharge. It was anticipated that experienced physiotherapists and novice physiotherapists may consider different factors when planning for discharge of older adults returning to the community, therefore each group of physiotherapists was considered separately. Study 3 was designed to investigate the factors experienced physiotherapists consider when discharge planning for older adults.

6.2 Abstract

Background: Physiotherapists are an integral part of the multidisciplinary team in rehabilitation settings. They are responsible for improving and measuring physical function and capacity to achieve the best possible function prior to discharge. Discharge planning is multi-factorial and physiotherapists must consider many aspects of the transition as well as physical function during the discharge planning process.

Aims: To understand the factors considered by experienced physiotherapists when discharge planning for older rehabilitation populations.

Design: A qualitative focus group design was used.

Participants: Six (6) female physiotherapists with over 5 years of experience working in inpatient rehabilitation units.

Procedures: Participants were recruited via flyers in the physiotherapy gym and office in the rehabilitation unit. A focus group was conducted using semi-structured interview questions. Study data were collected with audio and video recording and transcribed verbatim. Data were interpreted using deductive thematic analysis and a semantic approach.

Results: Two main themes emerged: Capacity and Future Planning. Capacity was further divided into three sub-themes: physical capacity, cognitive capacity and patient specific characteristics. Future planning was further divided into six sub-themes including: social support, equipment, environment, goals, follow up therapy, and funding.

Conclusions: Experienced physiotherapists consider many physical and non-physical factors when discharge planning. They assess multiple areas of discharge both formally and informally.

6.3 Introduction

Discharge planning is a multi-faceted aspect of the rehabilitation process that physiotherapists complete on a regular basis (Jette *et al*., 2003). Rehabilitation populations are known to be an elderly group who often have diagnoses of multiple co-morbidities (Di Libero *et al*., 2001; Patrick *et al*., 2001). Increased risk of depression in community dwelling elderly (Dean *et al*., 1992; Kim, Choe and Chae, 2009) may compound the complexity of discharge planning and present physiotherapists with challenges to overcome.

Previous literature has shown that the first month following discharge home is the greatest time of risk for failed discharge (Considine *et al*., 2019; Considine *et al*., 2020; Glans *et al*., 2020). Unplanned readmission may be associated with living alone, longer hospital stays and multi-morbidity (Shebeshi, Dolja-Gore and Byles, 2020; Gruneir *et al*., 2018). The economic implications of unplanned readmission is so great, that in 2012 a penalty system was implemented in America called the Hospital Readmission Reduction Program whereby hospitals are financially penalized if they have excessive readmission rates (Medicare, 2012). Other countries have adopted a similar quality and safeguards approach, including Australia where the Independent Hospital Pricing Authority have created guidelines for pricing and funding for avoidable hospital readmissions (IHPA, 2021).

Studies have now begun to explore the optimal combination of interventions to maximise function and address modifiable risk factors to reduce the risk of readmission *(Kripalani et al*., 2014; Pugh *et al*., 2021; Zhao and Yoo, 2021). A multi-factorial approach including medication safety, enhanced communication and training to manage medical conditions are proving to be beneficial for reducing hospital readmission rates (Kripalani *et al*., 2014; Zhao

and Yoo, 2021). Existing programs to reduce the frequency of unplanned readmissions currently take place during care transition and post-discharge when clinicians are no longer impactful on inpatient care (Zhao and Yoo, 2021).

Physiotherapists address patients' physical function and capabilities, which informs rehabilitation and discharge plans (Jette, Grover and Keck, 2003; Pashley *et al*., 2010; AHPA, 2022). Establishing meaningful and achievable goals and the assessment of functional status at multiple timepoints is important during rehabilitation (AFRM, 2012). By determining patients' previous level of function, a physiotherapist is capable of prescribing a treatment plan that will enable the patient to attain the highest possible level of function and independence prior to discharge (AFRM, 2012). Ensuring an adequate level of functional capacity for both in the home and community, will ideally give older adults the best chance at preventing readmission to hospital.

Formal outcome measures including the Timed Up and Go (Podsiadlo and Richardson, 1991), Balance Outcome Measure for Elderly Mobility (Haines *et al*., 2007; Kuys *et al*., 2011), and 10 Meter Walk Test (Bohannon, Andrews and Thomas, 1996) may be employed to assess whether patients are prepared for discharge from inpatient rehabilitation. These tools are standardized, valid and reliable (Bohannon, 1997; Haines *et al.*, 2007; Podsiadlo and Richardson, 1991).

Physiotherapists commonly conduct physical assessment and rehabilitation capabilities of patients (APA, 2022). What appears to be less well known are the multitude of other factors that physiotherapists informally assessed during rehabilitation and prior to discharge

(Matmari *et al.,* 2014; Taylor *et al*., 2010; Pashley *et al*., 2010). Chapters 4 and 5 of this thesis explored the importance of physical outcome measures as well as non-physical measures such as expected support post discharge and intrinsic factors such as depression, balance confidence and patient perceptions of readiness for discharge.

Factors included by physiotherapists in clinical decision-making regarding discharge has had some previous investigation. For example, patient involvement and the experience of the physiotherapist appeared to play an important role when discharging patients from an orthopaedic outpatient setting (Pashley *et al*., 2010). However, clinical decision-making of clinicians has not been explored when discharging older adults from inpatient rehabilitation. Such discharge planning may involve consideration of many factors including social supports (both formal and informal), physical function, environment, cognition, medication taking and the family's capability to provide the support expected by the discharging patient.

Differences have been demonstrated between experienced and novice physiotherapists. Differences have been noted in confidence, evaluation, communication skills (Jensen *et al*., 1992) and in the provision of collaborative, patient-centered care (Jensen, Gwyer and Shepard, 2000). It is possible that differences may also exist in the clinical reasoning of experienced and novice physiotherapists. One study was found that has investigated the clinical reasoning of expert and novice (student) physiotherapists in an outpatient orthopaedic setting (Doody and McAteer, 2002). Both novice and expert physiotherapists used hypothetic-deductive reasoning initially and reasoning focused treatment, but only the experts incorporated the use of pattern recognition (Doody and McAteer, 2002). It appears possible that differences may exist between experienced and novice physiotherapists

underpinning discharge planning of older adults being discharged from inpatient rehabilitation and therefore experienced physiotherapists will be the focus of this study.

6.4 Aims

The primary aim of this study was to understand the factors considered by experienced physiotherapists when discharge planning for older rehabilitation populations.

6.5 Methods

6.5.1 Design

A qualitative focus group design with semi-structured interview questions was employed.

6.5.2 Participants

Participants included registered and practicing physiotherapists with over 5 years experience working in the Geriatric Rehabilitation Unit at a large tertiary hospital in Queensland, Australia.

6.5.3 Procedures

A flyer was distributed within the physiotherapy rehabilitation gym and staff office area of the geriatric rehabilitation unit. The flyer briefly outlined the study aims, inclusion and exclusion criteria and invited potential participants to contact the doctoral candidate to participate in the study. Potential participants were screened to ensure inclusion criteria

were met. Informed consent forms and revocation of consent forms were provided to the physiotherapists. Participants were assured that any information collected during the study would be de-identified and would not in any way affect their performance appraisal or employment and participation in the study was completely voluntary.

A semi-structured interview guide was developed comprising open ended questions to elicit as much information as possible around factors that influenced discharge planning. The interview guide was developed with an aim to be as open ended as possible. Prompts included questions about physical status, environment, social support, community services, follow up therapy, emotional and cognitive/ psychological status. The interview guide was developed based on previous literature (Weiss and Piacentine, 2006) and following the areas investigated in Studies 1 and 2 in this thesis which looked at patient perceptions of readiness for discharge (See Figure 3.1).

The focus group was conducted by the PhD Candidate in a quiet room in the rehabilitation unit at a convenient time for participants on a regular working day. The focus group was conducted until the semi-structured questions had all been asked and participants had nothing further to add to the information collected. All participants were provided the opportunity to add anything they felt was important or had been missed at the end of the focus group (Fusch and Mess, 2015). The focus group was conducted in 2015, lasted approximately 75 min, and was recorded with both audio and video components for increased ease of transcription and collection (Asan and Montague, 2014). Audio video recordings were watched/listened to repetitively while the transcription process took place to ensure accuracy of the data transcribed (Asan and Montague, 2014). Transcription was

completed verbatim by the doctoral candidate who is a native English language speaker and was then sent for independent sampling to one other native English speaker for unbiased review to ensure robustness of the transcription process.

6.5.4 Thematic Analysis

Thematic analysis based on the six phases outlined in Chapter 3 of this thesis (Braun and Clarke, 2019) was undertaken using a semantic approach. Transcripts were assessed individually and without interaction or collaboration of the researchers to ensure blinding and objectivity in the findings. Initial coding and sub-themes were established independently by both researchers. Researchers were the same PhD Candidate and supervisors who completed the analysis for studies 3 & 4. The PhD candidate was a female who's native language is English and holds post-graduate degrees and had not met the participants prior to inclusion in the focus group. The supervisors were both native English speakers and hold PhDs and have experience in qualitative research, for robustness and accuracy of the process. Data were initially compiled into multiple sub-themes, and researchers then collaborated to reach consensus on major themes. A consolidated criteria for reporting qualitative research (COREQ) checklist (Tong, Sainsbury, and Craig 2007) was also followed and completed to ensure rigorousness of the analysis process and robustness of the data. See Appendix 3.

6.6 Results

The focus group comprised six (n=6) participants. All participants were female physiotherapists with more than five years experience working in rehabilitation. Participants ranged in age from 30 to 55 years old. During thematic analysis two main themes emerged: Capacity and Future Planning (Figure 6.1).

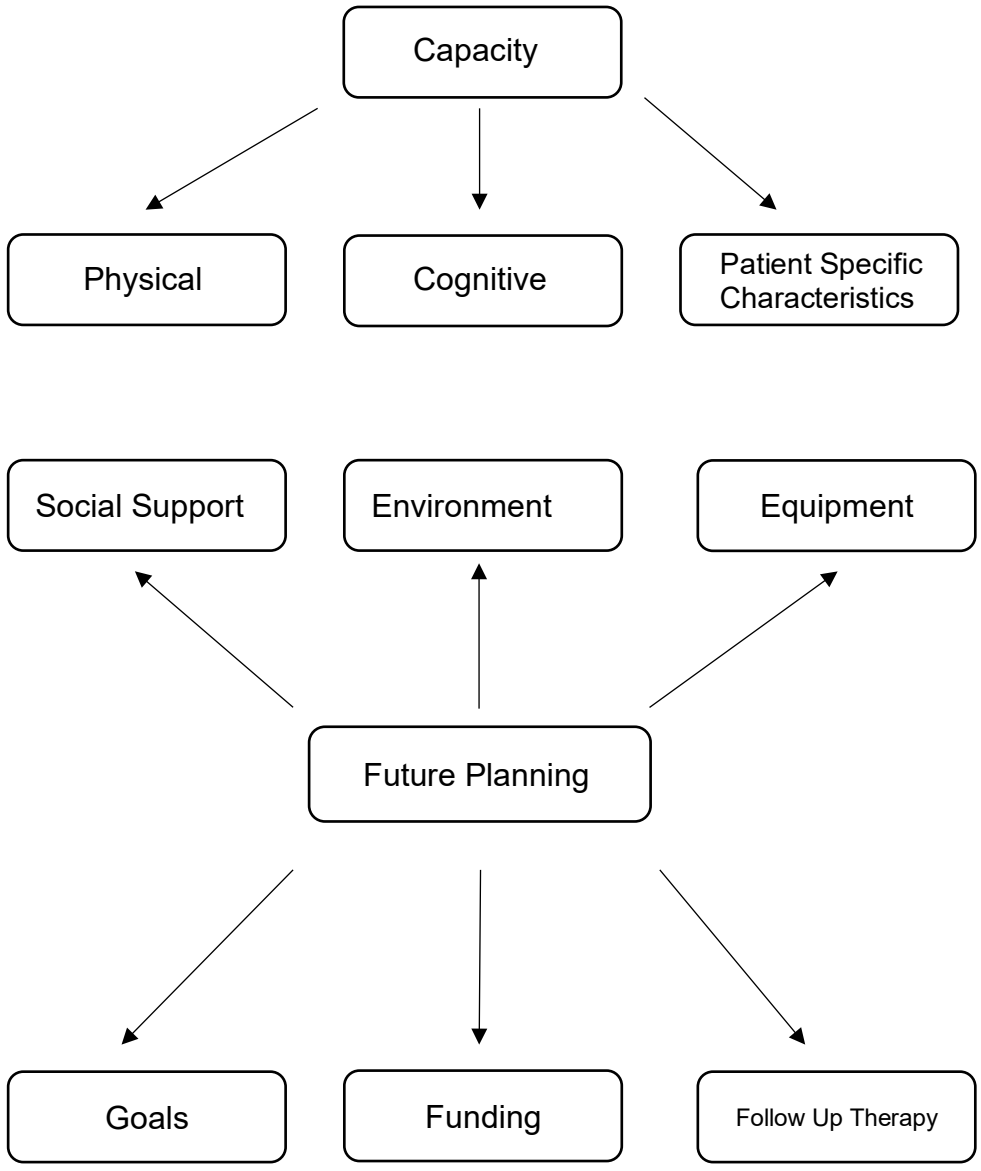

Figure 6.1 Themes: Capacity and Future Planning, and sub-themes: physical, cognitive, patient specific characteristics, social support, environment, equipment, goals, funding, follow up therapy found during experienced physiotherapist focus group.

6.6.1 Capacity

Capacity comprised three main sub-themes: Physical capacity, Cognitive capacity and Patient Specific Characteristics.

6.6.1.1 Physical Capacity

During the clinical reasoning process while discharge planning, physiotherapists determined physical capacity using a variety of factors both formal and informal. Mobility was consistently addressed and, if patients were mobile, the level of independence was identified e.g. whether physical assistance was required.

> *"We do the 6 Minute Walk Test for exercise tolerance. Just to give us an idea if they would cope with an outdoor mobility assessment even"* (EPT3)

> *"Just watching them on the ward, seeing how often they get up out of bed moving around without being encouraged to do that"* (EPT3)

> *"They have independent mobility. Whether it's independent by themselves or independent with their carer"* (EPT3)

> *"Although it does depend what level they need to be at. Depending on how much assistance they have"* (EPT1)

Functional ability to perform tasks was another aspect of physical capacity that experienced physiotherapists considered prior to discharge. Basic function including balance was contemplated as well as higher level function including indoor, outdoor and community mobility as well as stairs was considered.

> *"I think it depends on what the patient is going to have to do, you assess it"* (EPT1)

> *"And what they were doing before they even came into hospital as well. What their level was before"* (EPT6)

> *"Well, I mean you have your transfers, you have your general outdoor mobility, stairs if appropriate. So, it depends on the level of the patient"* (EPT2)

Taking function one step further, experienced physiotherapists looked outside the rehabilitation unit, home and immediate community to assess whether patients would be able to access the community for essential services such as groceries, medical treatment and social activities, and the transfers in/out of vehicles required to attend these settings.

> "*What they need, what transfers they need to do, where they need to do them, and what they need to access"* (EPT3)

> *"What they're going to be needing to do on discharge, so the functional level of what they need for discharge" (EPT3)*

6.6.1.2 Cognitive Capacity

Experienced physiotherapists saw cognition as both a positive influence and a barrier to discharge depending on the patient's ability to make safe and conscientious decisions for themselves. When asked what factors positively influenced their decision making about discharge, the physiotherapists agreed that intact cognition outweighed physical limitations within reason.

> *"Cognition. Or a lack of cognitive impairment"* (EPT3)

> *"I think if they're cognitively good, and they have a good supportive family, you could send somebody home without a lot of mobility"* (EPT3)

> *"For me cognition outweighs those issues (*function and mobility*)"* (EPT3)

Conversely, when asked what factors negatively influenced their decision making about discharge, the physiotherapists laughed and said as a collective group: "Cognition" (EPT1, EPT2, EPT3, EPT4, EPT5, EPT6).

> *"You get very mobile patients that are a bit knocked off cognitively that can't go home because it's not a secure environment. So there is no way of maintaining 24/7 supervision for them because of the cognition"* (EPT2)

6.6.1.3 Patient Specific Characteristics

Patient specific characteristics were considered by experienced physiotherapists during discharge planning. Informal assessment of the patients' personal characteristics such as attitude, intrinsic motivation and mood were shown to influence discharge decision making. Engaging in exercise programs, attending therapy regularly and being actively involved in the decision-making processes of rehabilitation were considered as positive factors for discharge planning. Experienced physiotherapists also placed emphasis on the importance of the patient taking responsibility for their rehabilitation program.

> *"Their* (patients) *general attitude can positively influence things, like if they're motivated and sensible"* (EPT1)

> *"If they're not motivated to come to physio here* (in rehabilitation), *they're not going to be motivated to do their exercises at home on their own"* (EPT5)

> *"And also what initiation they've got"* (EPT1), *"Yeah, initiation"* (EPT3)

> *"Also their mood, their affect too, if they're really depressed I think that can affect it too"* (EPT5)

> *"Sometimes the level of anxiety can increase (*when discharging home*), so I guess just flagging that. You're maybe not assessing it, but if you're aware of it, because you have built up a relationship with them, you can flag it with others and put in place some support ie social worker, neuropsych"* (EPT2)

"Taking some responsibility for themselves … medications and taking some ownership of their day scheduling" (EPT5)

6.6.2 Future Planning

When discharge planning for return to home in the future, experienced physiotherapists considered much more than patient physical capacity. Sub-themes for future planning emerged including: Social Support, Equipment, Environment, Goals, Follow Up Therapy, and Funding.

6.6.2.1 Social Support

Experienced physiotherapists considered factors such as the amount of social support available to a patient after discharge. They determined the support in the home can have a major influence on decision making about readiness and anticipated success of discharge. Factors considered included assessing aspects such as family support, the presence of a spouse, the preparedness of the people supporting the patient and even employment.

"Family supports and the health of the spouse as well, like how much physical help they're able to provide" (EPT5)

"Talking to them and their families and seeing if they have thoughts or issues" (EPT1)

"I think preparedness of the support. You are talking to the family and carers and asking questions, making sure that they are clear on what they need to do" (EPT4)

"What patients are actually going to do other than just therapy when they leave" (EPT2)

6.6.2.2 Equipment

Equipment requirements were addressed by experienced physiotherapists from a discharge planning perspective. In order to determine equipment needs, physiotherapists reported assessing level of function, the amount of assistance required, and the support network available. The level of independence was then considered further to determine whether equipment and mobility aids were required, and if the use of these aids would optimise function and thus allow a patient to be independent in their mobility.

"What level they (patients) *need to be at (*functionally)*"* (EPT1)

"How much assistance they have and how much adaptive equipment they (patients*) have"* (EPT1)

"The possibility that things actually continue to improve. So you're not necessarily only planning for the worst case scenario" (EPT2)

"That's the thing, there are completely dependent patients that get home, but it's a lot to do with the equipment and support network" (EPT1)

6.6.2.3 Environment

The setup of the immediate home environment and any potential barriers to discharge were examined by experienced physiotherapists. Aspects of the home including the layout, the presence of stairs, difficulty/ ease of access, home modifications required prior to discharge, and safety of the immediate environment were all considered.

"Physical layout of the home" (EPT5)

"*Like a difficult to access environment"* (EPT2)

"If there are home modifications that you know are needed they're in place" (EPT3)

"They (patients) *have a safe environment to go back to" (EPT3)*

Physiotherapists assessed the larger picture including the community and geographical location of the place of discharge and even the possible lack of security if supervision is required. They commented on the importance of conducting a home visit when possible and appropriate and also considered accessing the community independently or with assistance.

"A difficult to access environment like going back to someplace in a much more rural location" (EPT2)

"Can't go home because it's not a secure environment . . . and there is no way of maintaining 24/7 supervision for them" (EPT2)

"Something really important (home visit) *in this whole process that can flag potential problems, highlight to the patient the things we need to really work on"* (EPT5)

"You would be flagging community access. That might be something that needs to be looked at further down the track. If they (the patient) *have no access to a car and they need to get on and off little transport buses" (EPT2)*

6.6.2.4 Goals

Experienced physiotherapists were all in agreement that patients required goals while inpatients in rehabilitation. However, physiotherapists also stated that to have follow up therapy either in the home or in the day hospital, the patient needed to have ongoing goals that had not been achieved while in rehabilitation.

"*To have follow up (*physiotherapy*) they have to have some goals but if they don't have follow up therapy, they (*patients*) have to reach their goals here (*rehabilitation*)"* (EPT4)

"If they're actually motivated to continue to improve and they've got some goals for rehab" (EPT2)

6.6.2.5 Follow Up Therapy

Experienced physiotherapists used the presence of goals and intrinsic motivation to improve to inform their referral of the patient for follow-up therapies. Follow-up may occur in the hospital outpatient setting or in the community. Referral to community therapy services was suggested if patients lived in an area where home visits with hospital staff may not be possible. Physiotherapists were also aware that if the patients' function was too good upon discharge, the community therapy may be unavailable.

"*Day hospital would be if they (*patients*) actually had goals" (EPT2)*

"Somebody who you think is an ongoing rehab patient who is going to get more improvements, you would look more at the community rehab teams" (EPT5)

"We often have to access other hospitals because patients are going further afield, and often in those situations there isn't a lot of follow up therapy" (EPT2)

"*Also with TCP (*Transition Care Program*) now we can't get them too good because then they won't get TCP"* (EPT3)

The use of follow up support groups and community multidisciplinary teams were identified as being important to facilitate a successful discharge. The experienced physiotherapists were well versed in different support programs that existed in their metropolitan region and named many. While ultimately planning for a successful discharge back to home in community, physiotherapists were also realistic about contingency plans in case the patient didn't cope well post-discharge.

> "*Patient support groups such as a stroke support group"* (EPT4) . *"Amputee support group"* (EPT1)

> *"If they're a higher level you'd be looking at the community exercise program"* (EPT3)

> "*They will benefit from the multidisciplinary support in the community"* (EPT1)

> *"If it turns out that the discharge actually fails, they can go on to residential care and then there is someone who actually watches so they don't go home and have another fall"* (EPT4)

6.6.2.6 Funding

Funding was reported as being important when considering those discharging out of the metropolitan limits or into rural areas. The source of funding and what services were available were also of import. Physiotherapists felt that if the patient was able to access

funding it made the planning and decision-making process easier and gave the patient more options.

> "*I think about funding. Where the money is going to come from to do these things and options for follow up as well. And what they're going to need after they leave, as far as follow-up therapy is concerned"* (EPT2)

> "If they're *compensable in any way, shape or form it makes choices and decision making a lot easier. It just gives the person a lot more options"* (EPT2)

6.7 Discussion

The findings of this study indicate that experienced physiotherapists consider many factors when discharge planning for older adults in rehabilitation settings. Two main themes emerged: capacity and future planning. Capacity was further broken down into sub-themes of physical capacity, cognitive capacity and patient specific characteristics. Future planning was further broken down into sub-themes including social support, equipment, environment, goals, follow up therapy and funding.

The discharge planning process for older adults from inpatient rehabilitation is complex and multi-factorial (Bauer *et al*., 2009; Bull and Roberts, 2001; Coffey *et al*., 2019). Typically physiotherapists are known to assess physical capacity and function (AHPA, 2022; AFRM, 2012). However, it is becoming evident that physiotherapists undertake complex clinical reasoning during discharge planning processes (Matmari *et al.,* 2014; Taylor *et al*., 2010;

Pashley *et al*., 2010). Clinical discharge decisions are based on a multitude of factors and may include formally assessed outcomes including mobility, function, balance, transfers and strength (Jette *et al.,* 2003; AFRM, 2012). However, informal assessment of numerous factors also takes place when experienced physiotherapists are considering discharge to home for rehabilitation populations.

Experienced physiotherapists in this study addressed much more than just physical function and movement. They employed advanced clinical reasoning and patient-centered interventions and approaches to discharge. Similar to previous findings with expert physical therapists (Jensen *et al.,* 2000), participants in this current study had a genuinely caring and committed approach, assessed movement and related their assessment to patient function. Findings from the current study indicate that experienced physiotherapists exhibited complex clinical reasoning processes and took into consideration both the physical and non-physical factors when considering an older person's readiness for discharge. Formal assessment of physical function and capability are an expected aspect of the discharge process and often inform whether a patient will be able to function independently in their community and home environment (Jette *et al*., 2003). This is a skill that physiotherapists are known to be specialists in performing (ANZPHYSIO, 2015) and complete on a regular basis. When asked what factors they consider regarding physical readiness for discharge, experienced physiotherapists in this current study addressed mobility, independence with or without an aid, outdoor mobility, stairs and transfers. The assessment of physical factors by physiotherapists is no surprise, but previously the range and complexity of other factors that are informally assessed and addressed by physiotherapists during the rehabilitation and subsequent discharge planning process was not explored.

Informal assessment of cognitive capacity was contemplated prior to discharge home. While decreased cognition does not preclude functional improvement during inpatient rehabilitation (Poynter *et al*., 2011; Diamond *et al*., 1996), it may precipitate the recommendation for an older adult to be discharged under supervision only. Older adults in rehabilitation with decreased cognition have been found to experience increased length of stay, mortality, institutionalization and adverse incidents (Poynter *et al*., 2011). Conversely, older adults with decreased mobility but intact cognition may be discharged to home with support because the physiotherapist anticipates they will be in a safe environment and less likely to engage in risk taking behaviours. Experienced physiotherapists in this current study considered whether patients would be safe living independently or whether they may undertake behaviours that may increase the risk of unplanned readmission. Much evidence exists around early unplanned readmission in older adults (Considine *et al*., 2019; Considine *et al*., 2020; Glans *et al*., 2020; van Walraven *et al*., 2011). Other intrinsic personality factors such as motivation to engage with strength and balance exercise programs without direct supervision, or positive and negative mood that may impact on the success of discharge were also acknowledged by this group of experienced physiotherapists. The importance of considering the patient as a whole - including their function, cognitive capacity, environment, intrinsic motivation and support - and the ability of physiotherapists to consider these factors when clinical reasoning should not be underestimated.

Clinical reasoning and expertise come with experience, self-reflection, metacognition, critical thinking and collaboration (Liles, 2000; Jensen *et al*., 1992; Jensen *et al.,* 2000; Wainwright *et al*., 2010). Findings in Canadian literature report that experienced

physiotherapists have improved confidence in their ability, communication with patients about discharge, clinical judgement and understanding of patients' needs (Pashley *et al*., 2010). Experienced physiotherapists tend to rely more on knowledge gained from clinical experience with patients than from traditional tools and techniques learned academically (Pashley *et al*., 2010; Jensen *et al.,* 2000).

During consideration of the likelihood of successful discharge and planning for return to home in community, experienced physiotherapists utilised information sourced directly from the patient to help inform discharge plans. This included using knowledge about geographical location of where the patient lived to determine that, as shown in past literature, living in rural locations may present challenges with accessing health care services (McKenna, 2019). Also uncovered during direct communication with patients was information about what activities patients would like to return to post-discharge. This may have included the ability to access the community, attend social outings or medical appointments or engage in hobbies and activities. The experienced physiotherapists in this study used the patients' goals to determine what was required to make those goals achievable including mobility aids, functional capacity and the ability to mobilise in a variety of settings. Thus the patient, and often their family, were key sources of information for the experienced physiotherapists in this study and drove the clinical reasoning process for not only therapeutic regime while an inpatient, but also requirements for successful discharge.

Limitations of this study are that it was conducted at one centre with only female physiotherapists who had over five years experience in rehabilitation. At the time of the study, the rehabilitation unit had only female physiotherapists. Due to the limited number

of available physiotherapists who met the eligibility criteria, it's also unlikely that this study achieved data saturation. The lack of data saturation may have influenced the outcomes of this study (Fusch and Mess, 2015) (Guest *et al.,* 2020). Recently graduated, or novice physiotherapists were not included in this study. The next study in this program of research will explore the clinical reasoning processes of novice physiotherapists.

6.8 Conclusion

The study provides insight into the complex clinical reasoning experienced physiotherapists undertake when considering discharge of the older adult to home on community. Physiotherapists assess a wide array of factors, address the patient as a whole and approach the discharge planning process from a holistic perspective. They acknowledge multiple aspects of home life that may positively or negatively influence the likelihood of successful discharge.

This study is of importance due to the rapidly increasing population of adults aged 60 and over. The burden on the hospital system is only likely to increase with an increased number of older adults with comorbidities requiring admission to hospital and subsequently rehabilitation. It is imperative that older adults are provided the best possible chance at successfully discharging both for their sake and to reduce the incidence of unplanned readmission to hospital. While experienced physiotherapists have shown collaborative and holistic approaches to patient discharge from rehabilitation, it is not known if less experienced novice physiotherapists have similar clinical reasoning skills and capacity to address multifactorial discharge planning.

Chapter 7: Study 4

Novice Physiotherapists Clinical Reasoning and Decision Making in Rehabilitation: What Do They Know

7.1 Preamble

Chapter 6 explored the complex clinical reasoning processes that experienced physiotherapists undertake when discharge planning for rehabilitation populations in Australia. The findings indicated that much more than physical function is assessed when considering discharge to home in community for older adults. The scope of factors identified through a focus group with six experienced physiotherapists informed the need for further study. Previous research has identified there are differences in skills and abilities between experienced and novice clinicians. Therefore, it is important to examine whether differences exist in clinical reasoning between novice and experienced physiotherapists when discharge planning in rehabilitation populations. Study 4 seeks to determine the factors addressed by novice physiotherapists during clinical reasoning for discharge in rehabilitation populations.

7.2 Abstract

Background: Differences have been shown between novice and experienced physiotherapists when it comes to confidence, clinical reasoning, pattern recognition and metacognition. These potentially play a role in complex discharge planning for older adults with comorbidities who are being discharged from rehabilitation returning to home in the community.

Aims: To examine the factors considered by novice physiotherapists during discharge planning of older adults in rehabilitation settings.

Design: A qualitative focus group design was used.

Participants: Six (6) registered female physiotherapists with less than 3 months experience working in rehabilitation units.

Procedures: Study data were collected with audio-video recording and transcribed verbatim. Data were interpreted using deductive thematic analysis and a semantic approach.

Results: Two main themes emerged: Capacity and Future Planning. Capacity was further divided into four sub-themes: physical capacity, cognitive capacity, patient specific characteristics and coping capacity. Future planning was further divided into seven sub-themes including: social support, equipment, environment, goals, follow up therapy, funding and last minute / forgotten.

Conclusions: Novice physiotherapists consider many factors when discharge planning for complex rehabilitation populations. While they assess both physical and non-physical aspects of discharge, novice physiotherapists tend to be focused on the immediate discharge at hand and not on the long-term possibilities.

7.3 Introduction

Differences have been reported between the clinical reasoning of experienced versus novice physiotherapists (Wainwright *et al*., 2010; Wainwright *et al*., 2011; Doody and McAteer, 2002; Case, 2000; Jensen *et al.*, 1992). Physiotherapy graduates reportedly require two types of knowledge to succeed as clinicians. The first is technical knowledge which includes skills typically taught through academic pathways including anatomical knowledge, testing tools, pathological disease progression and facts (Shepard and Jensen, 1990). The second type of knowledge a physiotherapist requires is intuitive and experience based, and is known as reflective knowledge (Shepard and Jensen, 1990). The combination of these two distinct types of knowledge overlap and work in collaboration when a physiotherapist encounters a situation that is not typical or predictable.

Novice or newly graduated physiotherapists should possess the technical knowledge at a basic level to practice safely. Graduate entry physiotherapy programs, at least in Australia and New Zealand, educate physiotherapists the knowledge, physical skills, principles of evidence based practice and clinical reasoning to function competently as a physiotherapist (ANZPhysio, 2015). It stands to reason that the technical knowledge required to attain a degree and become registered as a clinician needs to be completed prior to practicing as a physiotherapist. A component of effective clinical reasoning is reflective knowledge (Constantinou and Kuys, 2013; ANZPhysio, 2015) which is a skill that may take many years to hone. Students' perceptions of using a reflective journal were investigated, it was found that the majority of students reported journal writing to be very useful when learning from their experiences.

In a Canadian study, novice physiotherapists reported the feelings of security associated with the institution disappear once graduated and commencing a new role in the workforce (Solomon and Miller, 2005) and reported feeling overwhelmed during the transition from student to clinician (Solomon and Miller, 2005). An Australian study exploring the transition from student to novice physiotherapist similarly found new graduates felt unprepared for their roles and reported difficulty managing expectations (Stoikov *et al*., 2022). Feelings of insecurity and stress were also reported during the transition from student to graduate, but eased with supportive environments and experienced physiotherapists who acted as mentors and role models (Solomon and Miller, 2005).

Clinical decision making involves a complex process whereby the clinician must 'make decisions with multiple foci, in dynamic contexts, using a diverse knowledge base, with multiple variables and individuals involved' (Smith *et al.,* 2008). Differences in clinical reasoning between expert and novice physiotherapists have been observed in cardiorespiratory clinicians (Case *et al.,* 2000). Thought processes of expert and novice physiotherapists were examined when considering a presented scenario; the expert group displayed more refined storage and retrieval of knowledge which then positively impacted their problem-solving ability and clinical judgement (Case *et al.,* 2000). Prior experience seems to inform clinical reasoning in physiotherapists (Wainwright *et al.*, 2010). Novice physiotherapists have been suggested to rely on informative factors such as technical knowledge, while experienced physiotherapists use more directive factors to inform their clinical reasoning (Wainwright *et al*., 2011). For novice physiotherapists, the lack of exposure in clinical experience perhaps manifests as trial and error approaches and a high degree of uncertainty when attempting to make effective clinical decisions *(Wainwright et*

al., 2011). These findings speak to the need for ongoing professional development to attain a higher level of clinical reasoning.

In rehabilitation populations, physiotherapists must be able to clinically reason and make decisions about the patients' discharge destination and the likelihood of a smooth transition (Jette *et al.,* 2003). Physiotherapists make decisions about discharge destination based on four constructs about the patient: life context, the ability to participate in care, wants and needs, and function and disability (Jette *et al.,* 2003). Information about patients is thought to be filtered through a physiotherapists' own perspectives and experiences (Jette *et al.*, 2003). These findings build on earlier work suggesting that experienced clinicians have more confidence at predicting patient outcomes (Jensen *et al*., 1992). Experienced clinicians have also been shown to be more competent in the realms of communication, teaching, control of the environment and evaluation and the use of disease data (Jensen *et al.*, 1992). These findings above illustrate that experienced clinicians are more confident and competent and suggests a need to explore the clinical reasoning around novice physiotherapists in greater depth.

7.4 Aims

The primary aim of this study was to examine the factors considered by novice physiotherapists during discharge planning of older adults in rehabilitation settings.

7.5 Methods

7.5.1 Design

A focus group of novice physiotherapists was conducted using the semi-structured interview questions used in Study 3. See Chapter 3 Methodology.

7.5.2 Participants

Participants included physiotherapists working in the geriatric rehabilitation unit of a large tertiary hospital in Brisbane. For inclusion in the study, participants had to be in their first year of clinical practice as a physiotherapist, have less than three months experience in rehabilitation, be actively working in the rehabilitation unit and consent to participate in a focus group with their peers.

7.5.3 Procedures

A recruitment flyer outlining the purpose of the study, inclusion criteria and the requirements for participants was posted in the rehabilitation unit gym and physiotherapy office. Informed consent was obtained and a revocation of consent form and outline of the study were provided to participants. The focus group was conducted at a date and time that was convenient for all participants and was held in a quiet room in the physiotherapy department.

The focus group was conducted in 2015 by the candidate using a semi-structured interview that was derived from a validated outcome measure and results identified in Chapters 4 and 5. Further details are available in Chapter 3, Figure 3.1.

7.5.4 Analysis

Thematic analysis (Braun and Clarke, 2019) was performed using the data collected during the focus group. Audio-video recordings were used and reviewed numerous times during verbatim transcription. Transcription and analysis were performed by the PhD Candidate who is a female physiotherapist and a native English speaker and had not met the participants prior to inclusion in the focus group. Excerpts of the transcripts were checked by an independent reviewer, who holds a PhD and has experience in qualitative research, for robustness and accuracy of the process. To ensure rigour of the process, a consolidated criteria for reporting qualitative research (COREQ) checklist (Tong, Sainsbury and Craig, 2007) was followed. Initial coding was performed independently by the candidate and an independent researcher. Researchers then collaborated to determine major themes and sub-themes that emerged from the data.

7.6 Results

Participants included six (n=6) registered and practicing physiotherapists who each had less than three (3) months experience working in the rehabilitation unit. All participants were within their first year of clinical practice as a physiotherapist. The focus group lasted 75min and was conducted until data saturation was achieved.

Novice physiotherapists identified several important areas of consideration for discharge planning. After coding the comments and items identified by novice physiotherapists, two main themes of capacity and future planning emerged as major areas of import. Additionally, novice physiotherapists identified and verbalised several other aspects of the discharge process that they considered including last minute/forgotten details, coping capability of the patient, complexity of discharge planning and clinical reasoning, future goals and working in with the multi-disciplinary team.

7.6.1 Capacity

The theme of Capacity of the patient comprised four sub-themes. Identified as being important for consideration were physical capacity, cognitive capacity, patient specific characteristics, and coping capacity.

7.6.1.1 Physical Capacity

Novice physiotherapists considered the physical capacity of the patient when considering patient readiness for discharge. Physical capacity included the safety of the patient in the home, patient readiness and capacity to improve and physical functioning of the patient as elements of successful discharge.

Novice physiotherapists displayed an awareness of the need for safety by verbalising that "*it's important to measure whether the patient is safe to be in the home environment*"

(NPT6), *and "all those safety issues, what they are going to be doing when they discharge home*" (NPT6). Physical capacity was also addressed by considering "*whether this patient is ready or not and has got potential to improve or not*" (NPT6). If there was capacity to improve physically, that *"they (the patient) don't necessarily have to be back to their premorbid level"* (NPT2) to have a successful discharge. The novice physiotherapists also conducted home visits to optimise safe outcomes suggesting *"setting it up when you back to the gym, you draw it out a little bathroom for them to practice in"* (NPT2).

Novice physiotherapists identified the need to *"try and predict like really early if you know that they're on their own, so they need to be independent"* (NPT4). And if returning home to live alone, the patient *"could go home with one assist or if we keep them longer we might get them to supervision"* (NPT1). More complex discharge factors including *"nighttime mobility and continence at night"* (NPT2) and whether patients are *"having their own shower that sort of thing"* (NPT1) were also accounted for in clinical reasoning.

A broad range of formal outcome measures used when considering readiness for discharge were used by novice physiotherapists. When asked specifically about how they determined physical function readiness for discharge the novice physiotherapists named an extensive list of outcome measures including;

"TUG (*Timed Up and Go)"* (NPT1)

"BOOMER (Balance Outcome Measure for Elder Rehabilitation)" (NPT4)

"DEMMI (DeMortons Mobility Index)" (NPT4)

"10MWT (10Meter Walk Test)" (NPT2)

"MAS (Mobility Assessment Scale)" (NPT2)

"COVS (Clinical Outcome Variables Scale)" (NPT2)

The typical battery of standardised outcome measures were listed with confidence as the ones that "*are on the (discharge assessment) sheet*" (NPT3). A discharge planning checklist is used in the rehabilitation unit as part of discharge planning.

7.6.1.2 Cognitive Capacity

Novice physiotherapists identified that patients needed to have sufficient cognitive capacity to manage their needs once discharged. Needs may include "*donning and doffing of slings*" (NPT2) and transfers "*if there is a tricky transfer, have they got a backup plan of how to remember if they forget it*" (NPT2). Comprehension of instructions and memory were considered when clinical reasoning for discharge. "*They don't take any notice that often, so you have got to review those things that are really the take home message*" (NPT3). "*They can use the independent living unit for a while and see if they remember to come up for the appointments or remember their medications. And then make sure you're giving them as much info as they need and seeing if they can deal with that*" (NPT2).

7.6.1.3 Patient Specific Characteristics

Novice physiotherapists identified the importance of considering "*how they (patients) feel about going (home). Are they ready to go, or do they want to go back home. Or do they think that's the last straw and they're going to move somewhere else*" (NPT2). Also reported was the need to "*unpack what their (patients) concerns are about going home and if it's lack of readiness, what is it that's actually impacting on their feelings of readiness*" (NPT5).

Physiotherapists highlighted the patients who had been in rehabilitation "*for six months and they've got their little friends and they're going home to live by themselves and maybe get really lonely" (NPT4). Physiotherapists also identified "the type of people that tend to come up with reasons not to go home, just because they're terrified of leaving*" (NPT2).

7.6.1.4 Coping Capacity

During questioning about coping, physiotherapists displayed knowledge of patients who may struggle post-discharge. Novice physiotherapists verbalized that "*it's a big deal (discharge) and it may be obvious to the physiotherapist that home isn't going to be the most appropriate place. But it may take some time to actually get a patient to see it and accept that so it's something you want to start flagging from the start*" (NPT3). Physiotherapists also commented on the cohort who re-presented with an unplanned early readmission. "*Or they've had so many admissions, like 20 times in the past year and they're just not coping anymore. It's time to change and you have to start getting social worker involved, to get an Aged Care Assessment Team to start the placement (to nursing home) process*" (NPT2). The physiotherapists felt the early unplanned readmission was a result of "*being acopic, not just scared. I think they're physically ok*" (NPT3).

Novice physiotherapists also showed a bias towards younger patients returning to community whereas older adults may be placed in residential care facilities. "*If you've got like a 20 year old stroke, then your discharge planning is obviously going to be centered around trying to actually get them back into the community. Rather than someone who is like 90 years old who may need some support*" (NPT2).

7.6.2 Future Planning

Novice physiotherapists considered many factors associated with discharge to home in an older rehabilitation population. When planning for discharge to home, novice physiotherapists used future planning to determine the needs of the patient. Future planning was examined and seven sub-themes emerged including: Social Support, Equipment, Environment, Goals, Services, Funding, Last Minute / Forgotten.

7.6.2.1 Social Support

Participants examined the social support patients receive upon discharge. "*You want to know if they have a frail partner or anyone else around, or if they're (patients) socially isolated*" (NPT3). Ensuring the family was prepared for discharge was a factor to be considered. "*At least ring the family and make sure they're comfortable. Because sometimes they're mentally prepared for having the patient next week and all of a sudden they find out they're going to be a carer as of tomorrow. So a lot of the time it's the patient and the carer you need to liase with*" (NPT1). Determining support at home was the best option for all involved was something the novice physiotherapists vocalized as well. "*And discussion with the family. Like sometimes the family don't like to admit maybe that nursing home would be the best place but they're not willing to do the cares either*" (NPT1).

7.6.2.2 Equipment

Ensuring that patients had the equipment required prior to discharge was identified during the focus group. Novice physiotherapists considered "*whether they have any equipment at home from before*" (NPT2) and "*checking that they have, or have hired, everything they need to hire prior to discharge*" (NPT3).

7.6.2.3 Environment

When addressing environmental factors, novice physiotherapists were thorough in their assessments and analysis of any barriers or enablers. They highlighted factors such as *"identifying their (the patients) home and social situation . . . if there are stairs"* (NPT4), *"whether they have any rails or ramps and where their house actually is (geographically)"* (NPT2). There were suggestions of performing *"a home visit to actually get them (the patient) to practice all the tasks (they'll need to be proficient in)"* (NPT4). *"Trying weekend passes and overnight passes to identify any problems"* (NPT2) was also suggested.

7.6.2.4 Goals

Novice physiotherapists considered whether patients "*have set realistic goals, and if so, have they reached their goals*" (NPT2). "*Having really specific goals in the first place, and then comparing what they're doing now to the goals really helps my (*the physiotherapists*) perception of whether they're (*the patient*) is ready to go*" (NPT2). Also identified as being important was "*what their goals are around discharge planning and getting back to doing stuff again*" (NPT2).

7.6.2.5 Services

The use of follow up services and therapy was identified "*I think arranging the follow up in the day hospital or outpatients if they do need to come back to improve anything if you see that the patient has potential to improve*" (NPT6). Also considered was discharge location "*if they need services, whether they can actually be provided at that location*" (NPT2) and "*you might think, they're (the patient) in a good area where they can get Mater at home or something, then maybe you just use services to do that*" (NPT1). Contingency plans for patients who require more assistance once discharged were also identified "*they can generally access Physio through their GP, so if you sent them home without follow up (therapy) because you thought they were doing well, just letting them know that there are ways to get back in touch if problems arise*" (NPT3).

7.6.2.6 Funding

When asked about factors around discharge, novice physiotherapists considered "*what are they (the patient) eligible for in terms of funding*" (NPT2). This was the only comment made around funding and financial support for patients upon discharge.

7.6.2.7 Last Minute / Forgotten

Novice physiotherapists reported they sometimes get caught with last minute details for discharge such as "*I'm really bad like that, I find that services are my last minute, they are about to leave and I'm like 'Oh no'*" (NPT3) or "*if you're at a case conference and discharge*

is meant to be in a weeks time and they say 'well she's pretty much ready, let's send her tomorrow'" (NPT5). Last minute conversations were also reported "*well I find sometimes at this point (48 hours pre-discharge) you are still confirming their follow up Physio or still talking to the family*" (NPT4).

7.7 Discussion

The findings of this study determined that novice physiotherapists consider multiple factors both physical and non-physical to inform discharge planning for older adults from a rehabilitation setting. Capacity of the patient in the domains of physical, cognitive and coping were explored as well as the intrinsic characteristics of each patient. Factors to consider for future planning were also identified including social support, the home environment, equipment requirements, goals and funding available for follow up services in the community. Novice physiotherapists also reported last minute aspects of discharge they forgot or struggled to organize and being caught out when discharge plans changed at the last minute.

In rehabilitation populations where multiple comorbidities are the norm (Di Libero *et al.* , 2001), and discharge destinations and plans are often complex *(Bauer et al., 2009; Coffey et al*., 2019), novice therapists may require training and support to make the optimal decisions for their patients (Jette *et al.,* 2003). When the evidence was examined, current findings indicated that novice physiotherapists have higher levels of stress, are less confident across several domains of patient care and discharge planning, and don't yet possess the experience required to self-reflect on past events to inform the best course of action for

current events (Solomon and Miller, 2005; Wainwright *et al.*, 2010; Wainwright *et al.*, 2011). Novice physiotherapists have also been shown to have a period of transition where they may feel overwhelmed (Solomon and Miller, 2005), unprepared and experience difficulty in managing expectations (Stoikov *et al*., 2022). Thus the need arose to explore novice physiotherapists' clinical reasoning during discharge planning to determine whether further training or support may be required to ensure optimal outcomes for patients under their care.

The complex clinical reasoning physiotherapists undertake during discharge planning is becoming more apparent (Pashley *et al.,* 2010; Matmari *et al.,* 2014) and was further illustrated by the findings of this study. The ability of novice physiotherapists to consider discharge planning from a holistic approach and acknowledge the multitude of factors that need to be incorporated for a successful discharge is promising.

Similarities existed in themes in the current study compared to those explored in Study 3 with experienced physiotherapists. These similarities speak to the level of competency of novice physiotherapists to consider factors required for safe discharge such as mobility, home environment, equipment, cognition and the ability to cope once home in the community. While similar themes emerged, novice physiotherapists tended to use a 'tick box approach' whereby they made sure they considered any potential complications and not forget to address any potential barriers for the purpose of discharge. Experienced physiotherapists tended to use a 'down the track approach' where they not only considered the potential barrier but thought it through in depth including possible changes of time and the implications of the barrier once the patient had discharged home.

Novice physiotherapists also expressed implicit bias about older adults in rehabilitation. Multiple comments made referenced older adults being admitted to care facilities and just having to come to terms with the decision being made for them, not with them. Other comments indicated that novice physiotherapists perceived that older adults didn't take any notice of what they were being told and forgetting things including the life they had outside rehabilitation.

Novice physiotherapists reported forgetting to organize aspects of discharge until the last minute. They also reported getting caught underprepared for discharge if the timeline for discharge or destination was changed by the multidisciplinary team in case conferencing. These themes were not identified with experienced physiotherapists (Chapter 6). The option for older adults to engage with their GP once home in community was forward thinking, however it would potentially have been more proactive to organize therapies prior to discharge rather than leave this to the GP. The candidate hypothesizes that experienced physiotherapists anticipated discharge and possible variations from the commencement of rehabilitation to allow for contingency planning. The ability to contingency plan while undertaking a program of rehabilitation is likely the results of experience and advanced clinical reasoning.

Limitations of this study include the sample size of six and all participating novice physiotherapists being female. The sample was one of convenience as participants had to be agreeable to participate and at the time of the study, there were only six novice physiotherapists on rotation on the geriatric rehabilitation unit. Also unknown was whether

the physiotherapists had undertaken placements in rehabilitation during their physiotherapy degree.

7.8 Conclusion

This study provides insight into the clinical reasoning of novice physiotherapists and the factors they consider when discharge planning for complex rehabilitation populations. While many aspects of the discharge process were considered, both physical and non-physical, some aspects were forgotten or left until the last minute. Novice physiotherapists also appeared to express implicit bias about older adults in rehabilitation, which may warrant further investigation in the future. Clinical implications of this study include the need for more support and advanced training of novice physiotherapists in rehabilitation settings to ensure they feel supported, aren't overwhelmed with the demands of the role and don't forget important aspects of the discharge process for this complex cohort of patients.

Chapter 8: Study 5

Retrospective patient perceptions of readiness to go home

8.1 Preamble

Results from earlier quantitative studies within this thesis found that patients tended to over-estimate their readiness for discharge. They also over-estimated their physical function and the amount of support expected post-discharge. Lastly, the risk of depression slightly increased post-discharge which is of concern in an elderly community dwelling population. Novice and experienced physiotherapists were found to have holistic approaches to discharge planning. Though novice physiotherapists appeared to be less forward-thinking than their experienced counterparts. This prompts questions about what patients' subjective thoughts and feelings are about the discharge process from both pre-discharge and post-discharge perspectives. While studies portrayed in Chapter 4 and 5 provided a wealth of data and information, there was limited opportunity for open ended discussion with patients to hear their views on the discharge process and their feelings around going home. This precipitated the need for Study 5 to perform patient interviews both pre-discharge and one-month post-discharge to investigate in depth the patient's perspective of the discharge process and their perceived readiness for discharge home.

8.2 Abstract

Background: Discharge planning for older adults from rehabilitation is a complex undertaking and patients should be the focal point of care. A multidisciplinary team works to help patients achieve the best possible level of. It is important to consider patient physical status, coping ability, support, balance confidence, positive influences and barriers to discharge and overall feelings about readiness for discharge.

Aims: To gain a rich understanding of patients' perspectives of the discharge process from rehabilitation to home from two different time points (pre-discharge and post-discharge) and determine whether patients' thoughts and feelings change once home in community.

Design: Face to face semi-structured interviews.

Participants: Eight (8) older adults who had stays in rehabilitation of longer than 3 weeks, were aged 60 years and over and were returning to live at home in the community with some level of functional mobility.

Procedures: Interviews were performed prior to discharge from rehabilitation and again at one-month post-discharge. Study data were collected with audio-video recording and transcribed verbatim. Data was interpreted using deductive thematic analysis.

Results: Prior to discharge half of the patients reported not feeling ready for discharge. Once home in the community all patients reported that they were actually ready to go home. Physical function continued to improve once at home in the community. Most patients were satisfied that their questions had been answered prior to discharge. All patients were receiving some level of support in the home either formally or informally. All reported to be coping well emotionally both pre- and post-discharge.

Conclusion: All patients discharged home from rehabilitation were actually ready to return to the community. They felt supported and were satisfied with the discharge process.

8.3 Introduction

Older adults are increasing in number due to increased life expectancy and improved medical interventions available (AIHW, 2021). The number of hospital and subsequent rehabilitation admissions is growing on an annual basis (AIHW, 2019). In rehabilitation units, the patient is the focal point of care, and multidisciplinary teams work in collaboration to achieve patient goals and improve functional capabilities (AFRM, 2012). The primary aim of admission to rehabilitation is to set and achieve functional goals and for patients to attain the best possible level of function prior to discharge home (AFRM, 2012). Incorporating a patient-centered approach to involvement during episodes of care to achieve best outcomes has been shown to assist with discharge (Knier *et al*., 2015). A need exists to ensure progress achieved during inpatient rehabilitation is sustained post-discharge to home. This may assist in reducing the risk of unplanned hospital readmissions.

Previous literature, has shown that the first 30 days post discharge are the greatest risk for unplanned readmission to hospital for older adults (Li *et al.,* 2015; Considine *et al*., 2020; Shebeshi *et al.,* 2020; Zhao and Yoo, 2021). Patients who reported higher readiness for discharge and those who lived with someone else appear to be at lower risk of readmission (Siow *et al*., 2019). Whereas patients who were readmitted to hospital reported lower readiness for discharge and reported feelings of relief upon readmission

(Howard-Anderson *et al.*, 2016). An increased risk of readmission was also noted for patients with comorbidities, longer hospitalisation and those who perceived less information during their hospital stay (Erlang *et al*., 2021). Identified areas for improvement may include clarity in discharge instructions, awareness of outpatient resources, self-care planning, and better symptom management (Howard-Anderson *et al*., 2016).

In recent years, several studies have investigated patient's perceptions of readiness for discharge (Weiss *et al.,* 2007; De Lange *et al.*, 2020; Bobay *et al.*, 2010; Coffey, 2013; Posri *et al.,* 2022). The concept of readiness for hospital discharge may be characterised by several main attributes: physical stability, psychological ability, adequate support, information and knowledge (Galvin *et al.,* 2017). Older adults have also been shown to have a sense of attachment and feelings of security in relation to their homes and community (Wiles *et al*., 2012). Thus, it is understandable why patients may overestimate their readiness for discharge in their anticipation to return home to family and familiar surroundings.

Older adults engaging in rehabilitation programs are known to have increased prevalence of comorbidities (Di Libero *et al.*, 2001; Giaquinto *et al.*, 2001; Patrick *et al.*, 2001). It has been suggested that as many as two thirds of adults over 80 years of age have three or more chronic diseases (Stewart *et al*., 2017). Comorbidities and the resulting implications may contribute to patient-identified barriers to discharge. Barriers to discharge have been shown to include daily-living activities, pain and lack of understanding of recovery plan (Harrison *et al.,* 2016). Patient-reported barriers have been shown to be prevalent

and incompletely addressed, with 90% of patients being discharge home with at least one issue remaining (Harrison *et al*., 2016).

Discharge planning for rehabilitation populations is complex and multifactorial (Considine *et al.*, 2020; Erlang *et al.*, 2021). Interventions to assist with the transition of care from hospital to home should be commenced while patients are still in hospital and should enhance patient empowerment to achieve best outcomes (Braet *et al.,* 2016). Patients report perceptions of receiving information, however few report perceptions of being involved in the discharge planning process (Almborg *et al.*, 2009). Despite earlier reports of being left out of the decision-making process (Congdon, 1994), a lack of communication between healthcare professionals and the patient (and carers) is still being identified by current research (Considine *et al.*, 2020; Erlang *et al.*, 2021; Hestevik *et al.*, 2019). Even more concerning is a relationship found between patient involvement in discharge planning and 30-day readmission rate (Erlang *et al.*, 2021). A systematic review identified three main themes important for discharge consideration in complex rehabilitation populations; the importance of functional outcomes, confounding factors impacting on discharge destination, and length of stay and barriers and facilitators to discharge (Gledhill *et al.*, 2021). Important considerations for clinicians to determine readiness for discharge include; assessing social supports, functional outcomes, optimal timing of discharge, and advanced clinical reasoning (Gledhill *et al.*, 2021).

8.4 Aims

The aim of this study is to expand on the findings of the two earlier quantitative studies and gain a rich understanding of patients' perspectives of the discharge process from rehabilitation to home from two different time points (pre-discharge and post-discharge) and determine whether patients' thoughts and feelings change once home in community.

8.5 Methods

8.5.1 Design

A qualitative design was used with semi-structured interviews at two separate timepoints pre-discharge and again post-discharge. A qualitative design was used to investigate the experiences and opinions of older adults discharging home from rehabilitation.

8.5.2 Participants

Participants were older adults aged 60 years and over who had undertaken a rehabilitation program in one of three wards in a geriatric and rehabilitation unit in a large hospital in Queensland, Australia. Participants had to have sufficient English and cognition to complete questionnaires and interviews. The rehabilitation program had to be over three weeks in duration, and participants had to be returning home to live in the community with or without family.

8.5.3 Procedure

Participants were identified by their treating therapist in the rehabilitation as meeting inclusion criteria. One of two primary researchers visited patients and informed them of the study during the week prior to discharge from hospital. At the time of recruitment, participants were asked to participate in two interviews and informed that one would be prior to discharge and a follow up interview would take place at their home, approximately one-month following discharge from hospital.

A semi-structured interview guide was developed, informed by the sub-sections of the Modified Readiness for Hospital Discharge Scale (MRHDS). Questions were open-ended to encourage patients to expand on their responses from the written questionnaire. Aspects of discharge were explored in depth including physical status, knowledge, coping, and expected support. Interviews were performed both pre-discharge and post-discharge by the candidate. Pre-discharge interviews were performed in the rehabilitation unit within two days of discharge. Post-discharge interviews were performed in the patients' home at one-month post-discharge. Time was spent on idle conversation and rapport building prior to starting the interview to ensure participants felt comfortable to speak openly and honestly with the researcher. Interviews were recorded with permission of the participant in audio-video format.

Interviews were performed until data saturation was reached. Data saturation was determined by the repetition of information and there was a lack of new evidence forthcoming from participants. Participant demographics were collected including age,

gender, length of stay, condition group, mobility aids, follow up therapy, post-discharge services, and falls post-discharge.

8.5.4 Analysis

Thematic analysis was performed using the six-phase framework for coding and theme development outlined by Braun and Clarke, 2019. Interviews were transcribed verbatim from audio-video recordings by the PhD Candidate who is a female physiotherapist and a native English speaker and had not met the participants prior to inclusion in the focus group. Samples of the transcriptions were reviewed by an independent reviewer who holds a PhD and has experience in qualitative research, to ensure quality and rigour of the process. Braun & Clarke's framework was then employed to assess the data collected and analyse emerging themes (Braun and Clarke, 2019). Descriptive statistics were utilised to assess participant characteristics data.

8.6 Results

8.6.1 Participant Characteristics

Eight (n=8) patients participated in the interviews. Participants were predominantly male (75%), and had an average age of 70 years (SD9). Data collection took place between November 2015 and February 2016. Interviews lasted approximately 30-45 min each depending on the participants engagement. The average length of stay in the rehabilitation unit was 46 days (SD29), and the highest portion of participants were admitted for orthopaedic interventions (50%). Four participants were returning home to

live alone, while the other four were returning to live with family. Over half of participants required mobility aids upon discharge (63%), and received services in the home post-discharge (63%). Follow up therapy was organised for 50% of participants post-discharge. Only one participant had a fall post-discharge but did not require readmission to hospital with injuries. The remaining seven participants had successful transitions to home without falls. Table 8.1 outlines the participant characteristics.

Table 8.1: Participant Demographics

Characteristics	
Gender, n males (%)	Male (75)
Age (years), mean (SD)	70 (9)
Length of Stay (days), mean (SD)	46 (29)
Condition Group, n (%) - Ortho-geriatric - Neurological - General De-conditioning	 4 (50) 2 (25) 2 (25)
Lives Alone, n (%) Yes	 4 (5)
Mobility Aid, n (%) Yes	 5 (63)
Follow Up Therapy, n (%) Yes	 4 (50)
Services. n (%) Yes	 5 (63)
Fall Post-Discharge, n (%) Yes	 1 (13)

8.6.2 Themes

Seven themes emerged during analysis of interview transcripts. Themes included; discharge readiness, factors influencing discharge readiness, physical status, knowledge, coping, support and quality of life (Figure 8.1).

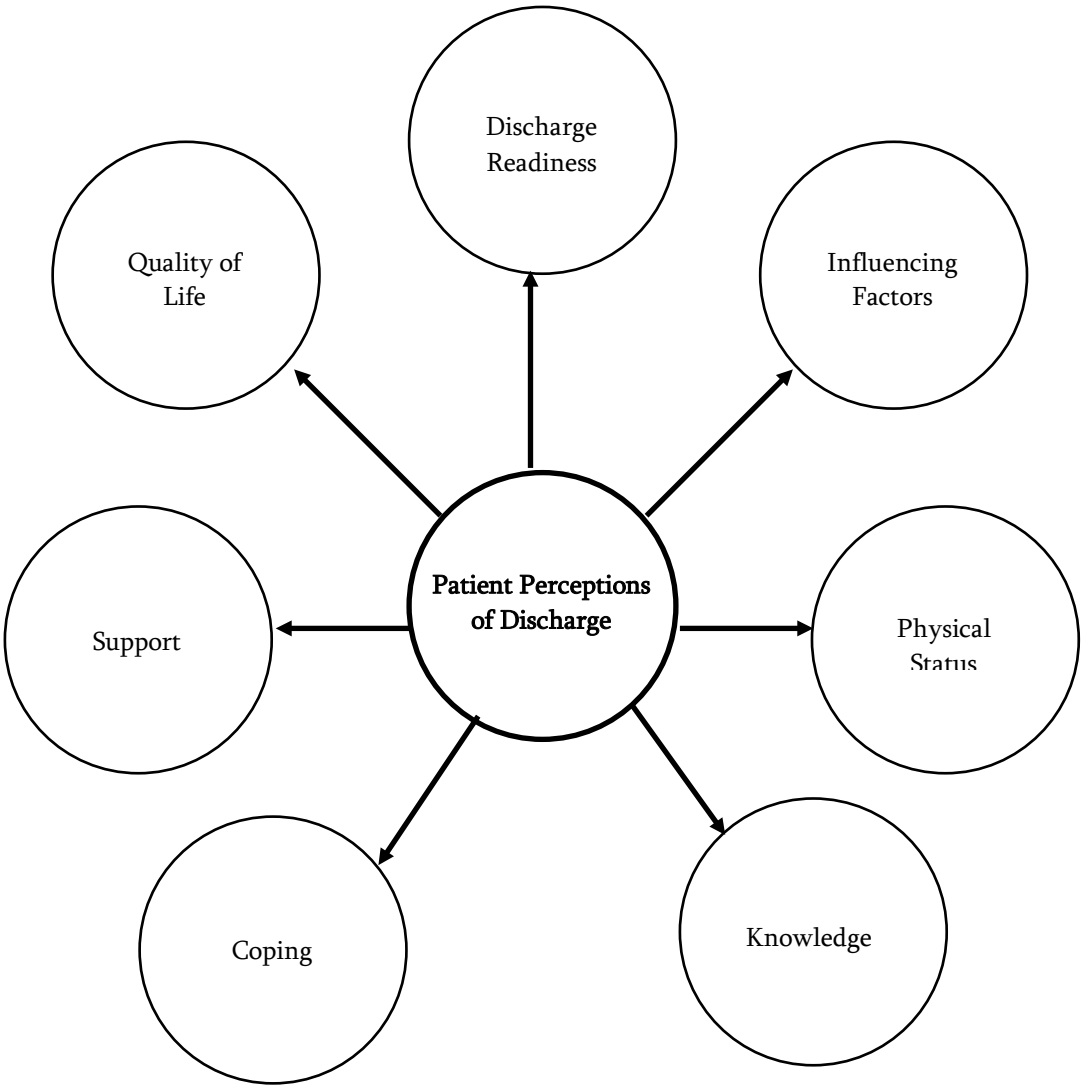

Figure 8.1 Themes around patient perceptions of discharge; discharge readiness, factors influencing discharge readiness, physical status, knowledge, coping, support and quality of life

8.6.2.1 Discharge Readiness

During pre-discharge interviews, only four (50%) participants reported feeling ready to go home. While some participants were confident and immediate in their responses of readiness, others were unsure that they were ready to go home or felt that they needed to stay in rehabilitation a while longer. Several participants stated they were decidedly not ready to go home.

> "*Yes, I think so, yes*" (PT6)

> "*I'm ready, but I don't think the body is quite ready yet*" (PT2)

> "*I don't feel I'm quite ready to go home yet*" (PT7)

> "*I think that I should have at least another week. Maybe even a fortnight*" (PT5)

Post-discharge all eight (100%) participants reported feeling that, when considered retrospectively, they actually were ready for discharge.

> "*Yes, I was ready to come home*" (PT6)

> "*Yes. I do now, I didn't when I was in hospital*" (PT5)

8.6.2.2 Factors Influencing Discharge Readiness

Patients were asked about factors that influence their feelings and readiness for discharge. When considering positive influences to assist in readiness for discharge prior to discharge, patients reported their mindset, and the desire to return home to their homes and families helped them feel positive. Patients also consistently reported positive feelings about the support of the members of the rehabilitation team including doctors and physiotherapists. Positive feelings were reported around having home visits with therapists and knowing that family would be at home to assist them in the early days.

> "*You know you're ready to go home. You just know it yourself*" (PT6)

> "*My daughter is going to be there*" (PT6)

> "*There's been a lot of really good help here* (rehabilitation)" (PT7)

> "*I went home last week for just a day at home*" (PT5)

In the post-discharge interviews, patients identified the support of rehabilitation staff, ongoing therapy, assistance from family and friends and positive feelings of being back in their own homes as positive influences on the transition to home.

> "*I keep coming back to the confidence of the people who work with you (*rehabilitation staff)*. That's just been fabulous*" (PT8)

"*When I understood that there would be ongoing health and training to help me get through the bumpy parts still, that was very important to me*" (PT7)

"*It's nice to be in your own home, and I was happy to come home*" (PT2)

When considering negative factors that influence discharge, some patients reported barriers as being activities that they could no longer engage in such as driving, engaging with the men's shed, use of power tools, or managing a large property and horse riding. Others reported physical things such as navigating uneven surfaces and stairs, wound healing and managing high levels of pain.

"*The fact that I've had my driving license taken away from me because of the injury I had to my head and ahh, I've been banned from electric tools*" (PT1)

"*The difficulty is ahh, the stairs. That was just one small problem to overcome*" (PT4)

"*Ahh I'm still dealing with a lot of pain and I'm not sure how I'm going to deal with it all psychologically*" (PT7)

Two patients were discharging home to a different residence than where they had lived prior to admission. For various reasons their former home was no longer an option for them.

"*Well, going home is a little bit unknown for me right now, because it's a new place that I'm going into*" (PT5)

One patient in particular had very delayed therapeutic intervention on an upper limb fracture due to miscommunication by medical staff and was disappointed at the needless lack of therapy and progress.

"*I kept asking for weeks about my shoulder and I wasn't getting anywhere … but the physiotherapists were very good and pressured the doctors … so they could work out a plan of working on it* (shoulder)" (PT2)

8.6.2.3 Physical Status

The majority of patients (88%) reported that their functional abilities improved during the program of rehabilitation. Despite these reports, all patients interviewed before discharge to home felt there was still work to be done and that they weren't fully recovered.

"*I think that I'm improving on my walking*" (PT5)

"*Yeah, my legs probably need a little bit more work, and confidence*" (PT5)

"*Yes, it's a work in progress*" (PT8)

Patients were asked post-discharge how they're managing physically and whether their functional ability has changed since discharge from hospital. Responses ranged, however all reported some improvement in the month since discharge. Patients reported feelings of confidence in regards to mobility and physical improvements post-discharge.

> "*Physically, well I'm much better than what I was when I came home … but I can probably do a little bit more yet*" (PT5)

> "*It's all moving forward, it's all moving in the right direction and I've been told that I am moving faster than what a lot of people do and I'm way ahead of the game*" (PT7).

8.6.2.4 Knowledge

Most patients were satisfied that questions about the discharge plan, medical treatment, and follow up intervention were all answered prior to discharge. Only one patient reported dissatisfaction with his questions being answered prior to discharge. It was in relation to an upper limb fracture and not knowing the treatment plan for the future.

> "*Resources and information and people that you can contact if you need? Yeah, that's all here*" (PT7)

> "*Well it took a long time to get a definite answer to the damage to my shoulder and I've only got that recently*" (PT2)

Six out of eight patients reported all of their questions had been answered to their satisfaction when asked again post-discharge. Those who reported dissatisfaction with questions being answered were in regards to wound healing times and future therapeutic intervention plans.

8.6.2.5 Coping

One of the interview questions sought to determine whether patients were emotionally prepared to cope at home post-discharge. There were a broad range of responses ranging from yes - totally emotionally prepared, to no - not at all prepared. One patient reported being suicidal previously and was worried that he may go down that path mentally again.

> "*Emotionally, I think I can handle things emotionally*" (PT5)
>
> "*I just cannot cope, just thinking about it* (discharge)" (PT3)

> "*I have been in the situation where I was suicidal a few times and there's a little bit of fear that I'll head back that way when I'm by myself.*" (PT7).

Post-discharge reports of coping emotionally were more positive. All patients reported coping well once back at home in the community.

"*I still have my ups and downs … I still have some tablets that I'm taking, a mood enhancer*" (PT3)

8.6.2.6 Support

Support was reported in various forms depending on the patient being interviewed. Some patients reported having family members at home helping them, a wife, a husband or adult children. While others reported having a supportive friend network or formal services that come into the home to assist with therapy, cleaning, shopping and domestic cares. Pre-discharge, patients all identified anticipated support networks that would assist in the transition to home.

"*I will have my husband, I stay with my husband …but I'm a very independent person*" (PT3)

"I've got a very strong friend support network as well, they're constantly ringing to see I am. So they'll be coming and visiting me" (PT6)

"*I've got Flexi Care coming and they do the floors and if I have washing to put out or bring in or fold the washing, that sort of thing … and transition care as well*" (PT6)

When asked at post-discharge how much support they are actually receiving, some patients reported formal supports on a weekly basis while others relied on family and friends to assist with travel, domestic tasks and shopping.

> "*Showering three times a week, physiotherapy once a week and shopping assistance once a week*" (PT1)

> "*I get a lot of help with Anglicare, they come and do my cleaning and take me shopping and Anne (my ex-wife) comes and does the laundry*" (PT5)

Patients were asked if any difficulties were anticipated once they return home. Some were confident there wouldn't be any difficulties encountered post-discharge. Reports from other patients included concerns about wound dressings, accessing public transport, sourcing accommodation, and not having a driver's license to access the community.

> "*I don't have any real concerns you know*" (PT1)

> "*I think you can always stop and think of dozens of difficulties, but I think if you spend the same amount of time looking at the other side, you can balance it out equally*" (PT2)

> "*I don't want to leave here with all these wounds and things"* (PT3)

Once settled in at home, when patients had had a chance to attempt various tasks and challenges, the reports of difficulties changed slightly. Some challenges included managing gardens, mobilising on uneven ground, knowing when to rest and accessing public transport confidently.

> "*I've not tackled any gardening yet, but I have cleared the dead branches of the ferns that I've got on the front*" (PT1)

> "*I've thought about travelling on the bus, but I won't risk getting on because they take off so suddenly and I'm a bit too slow. Not quick enough on my feet*" (PT5)

8.6.2.7 Quality of Life

Patients were asked both pre- and post-discharge if their quality of life had changed since the reason for their admission to rehabilitation. Prior to discharge, patients primarily reported changes for the worse due to their decreased physical function, pain levels and feelings of loss of control over their life. One outlier reported significant improvement in quality of life and decreased pain levels while in rehabilitation. He had bilateral total hip replacements and prior to admission for surgery was bed bound with severe pain.

> "*When I came here, only my left leg was working, it took a while for my right leg to be able to walk, so yeah*" (PT3)

"*I'm just being slowed down by the pain levels … I need to find a way to deal with the pain and to go forward*" (PT7)

"*I'm not fully in control of it you know (*his life*)"* (PT5)

Post-discharge quality of life was reported with more promising connotations. Patients were happy to be out of pain, back at home in the community, and with their families. While a few reported a level of function below their premorbid baseline, they appeared to have come to terms with their new physical status.

"*Well it has changed for the better, I am back with my family and back in my home*" (PT3)

"*It's nice to be back in your own home, and probably the freedom* (of being home)" (PT2)

"*Well my quality of life has changed, it's not what it used to be but it's about as good as it's going to get, yeah*" (PT5)

8.7 Discussion

At the time of discharge, half of the participants recruited to this study reported feeling ready for discharge, while the others reported feelings of being not quite ready yet. Post-discharge, all participants reported actually being ready to return home at the time of

discharge. This could potentially be biased because the participants that were interviewed were those who had successful discharges and remained in the home past the one month risk period for readmission. The feelings of attachment and security in relation to homes (Wiles *et al.*, 2012) was likely a contributing factor in the positive transition to home in the community. These results support a concept of increased readiness for hospital discharge for patients who are returning home to live with family and have support systems in place (Gledhill *et al.*, 2021). This may present an opportunity for further study around supportive home environments improving readiness for discharge in rehabilitation populations.

These findings differ from those identified in Study 2 (Chapter 5) of this research program which indicated older adults being discharged from inpatient rehabilitation over-estimated their readiness for hospital discharge. Patients also overestimated their physical status and the amount of support expected upon discharge. The interviews conducted in this current study indicated that patients underestimated their readiness for discharge. Additionally, all patients reported managing well physically once back at home in community. Lastly, patients reported more support post-discharge than what their pre-discharge expectations were. These finding are based on verbal reports from patients and may differ from quantitative outcome measure results. It is important to objectively assess the physical status of older adults by using reliable outcome measures prior to discharge. As well as to determine the amount of support they will require/receive upon return home due to the complex and multifactorial nature of discharge planning for older adults (Considine *et al.*, 2020; Erlang *et al.*, 2021). However, lack of patient involvement in the discharge planning process, may lead to increased risk of readmission to hospital (Erlang *et al.*, 2021). Thus, the need exists to explore functional outcomes, barriers and facilitators, length of stay and

confounding factors that may impact discharge destination (Gledhill *et al.*, 2021). Consideration of these factors in collaboration with the patient will inform the clinical reasoning processes of treating teams to determine collectively when the patient is truly ready for discharge.

Support provided by members of the multidisciplinary team, including physiotherapists and doctors, was identified as being a positive influence in feelings of readiness to return home. Positive reports were made regarding the confidence of rehabilitation staff, assistance provided, guidance and education about physical requirements for discharge. Home visits were also seen as a positive activity to undertake as it allowed patients and therapists to assess any physical challenges the patient may encounter as well as determine any modifications required prior to discharge. The home visit gave patients confidence that they would be able to manage in the home environment. All patients, except one, were satisfied with their medical management, rehabilitation interventions, and the attitudes and helpfulness of the multidisciplinary team.

Previously patients in rehabilitation were found to be discharged with at least one patient-identified barrier to discharge still present (Harrison *et al.*, 2016). This was also the case with the cohort in this current study. Patients identified various barriers including; sub-optimal physical function, feelings of not being ready, not being fully healed, not having a drivers license, returning to a different place of residence than prior to admission and not knowing the plans for future medical treatments. However, when re-assessed post-discharge, most barriers had been resolved with exception of drivers licenses being reinstated, delayed physical recovery and communication breakdown in one case.

The majority of patients reported being pleased with the progress they made during their stay as inpatients in rehabilitation. While all made progress during inpatient rehabilitation, a common theme was the need for further recovery of function post-discharge. In the post-discharge period, improvements in mobility, balance, confidence, physical function and strength were observed by participants. Most patients had returned to their baseline level of function and returned to previous activities and hobbies. Two patients reported still having functional goals to achieve in the future. These patients had significant orthopaedic injuries and subsequent surgical intervention. One positive aspect was the motivation displayed by patients during both the pre-discharge and post-discharge interviews. Patients had positive mindsets and believed they could achieve the premorbid level of function in most cases. Whether this was due to the supportive nature of physiotherapists and other members of the rehabilitation team remains to be investigated.

With the exception of two patients, all consistently reported satisfaction with the medical treatment regime, future treatments, rehabilitation program and discharge plan. These findings are positive in light of previous findings that suggest that a patient-centered approach with inter-professional models of care assist in achieving best outcomes (Knier *et al.*, 2015). Information and resources were given to patients in both verbal and written formats, and patients felt informed about the discharge plan. When asked if all of their questions had been answered to their satisfaction both pre- and post-discharge, the majority of patients responded positively.

Two cases of dissatisfaction included not being informed of wound healing times, though the patient stated that the treating team had no way of knowing how long it would take to heal given the confounding variables. In one instance, miscommunication between orthopaedic consultants, geriatricians and physiotherapists precluded a patient from having any active rehabilitation on his fractured shoulder for a period of weeks. Physiotherapy staff repetitively sought clearance to commence rehabilitation and the patient was quite disheartened with the lack of therapeutic intervention on the upper limb during his stay in the rehabilitation unit. This presents a learning opportunity for rehabilitation staff. The orthopaedic team operates out of the acute medical hospital (one the same location) and is a separate entity to the multi-disciplinary team in rehabilitation who meet weekly and conference both formally and informally at numerous timepoints. Clearer communication from acute medical / surgical teams when patients are undergoing inpatient rehabilitation may have optimised continuity of patient care.

The capacity to cope emotionally with new physical functional status and the anticipation of discharge was explored. In previous studies, post-discharge coping difficulties focused around caring for self, family, advice needed and what they wished they knew before discharge (Fitzgerald Miller *et al.*, 2008). Prior to discharge, patients in this current study ranged from those who were very confident that they would manage quite well, to those who claimed just the mere thought of discharge was enough to cause them angst. Most patients reported some minor degree of uncertainty as to how they would cope emotionally after discharge. Of concern was one patient who had a history of suicidal ideation. He was concerned that he may regress psychologically and require professional help again. He had strategies in place including checkup phone calls from his daughter and touching base with

his GP regularly to ensure if his mental state deteriorated, he would get help immediately. Post-discharge reports of coping emotionally were much more positive. Patients reported a few inconsistencies and one required antidepressant medication to assist with mood. However, the majority of patients identified a supportive home environment with family and friends which assisted them greatly during the transition to home.

Emotional coping capacity may be intrinsically linked to having a solid support network that can assist with the transition to home. Findings from patient responses in this current study illustrated a variety of support measures were used that assisted patients during discharge from rehabilitation to home. Three patients in this current study were returning home to live alone, however all reported having formal assistance through agencies with showering, cleaning and shopping. The remaining five patients were returning home to life with partners or had adult children who were going to reside with them for an extended period of time to assist in the transition. The knowledge that family and friends are around to assist if difficulty arises may contribute to positive feelings around discharge.

A multidisciplinary discharge care plan has been shown to improve quality of life, satisfaction with discharge care and involvement (Preen *et al.*, 2005). Implementing patient-centered care has also been shown to improve satisfaction and quality of life (Poochikian-Sarkissian *et al.*, 2010). It is intuitive that after a life changing medical event and subsequent admission to rehabilitation, older patients may feel some loss of quality in life. During their inpatient stay in rehabilitation, patients in this current study reported decreased quality of life due to various factors including decreased physical function, high pain levels and feelings of loss of control over their life. Additionally, some patients reported being unable

to engage in pleasurable and meaningful activities such as gardening, horseback riding and even driving. Two patients in this study lost their driving privileges due to head trauma and had to wait 6 months for medical clearance to regain their licenses. This greatly affected their ability to access the community, engage in social activities with friends and family, and affected their sense of independence and freedom.

Positive findings during post-discharge interviews were the positive feelings associated with current quality of life and the anticipation of further improvement. Once at home in community surrounded by family and friends, patients were able to continue with their rehabilitation programs and achieve further physical gains. As a cohort, they were much happier being back in the community with their family and friends and living at home. A recent study shows promise for home-based rehabilitation of older adults with a patient-centered focus (Loveland *et al.*, 2022). This may be of benefit for those who want to expedite the transition from hospital to home and complete rehabilitation in the comfort of their own home with supportive family and friends surrounding them.

Limitations of this study include the sample of convenience, geographical discharge destination and conversational ability. Of the 101 participants recruited for the initial quantitative phase of this project, those willing to participate in two interviews were nominal. Several participants agreed to the interviews but withdrew after the pre-discharge interview process. This resulted in a sample of eight consisting of six men (75%) which is not representative of the original sample recruited to this program of research where 56% were male. Patients were also excluded based on geographical discharge destination as the candidate travelled to patients' homes for the follow up interview to maintain consistent

data collection procedures. Thus, patients who were discharging out of the immediate region were unable to be involved in the interviews because of geographical location. Patients were also identified for recruitment by their treating therapist depending on their conversational capacity while in rehabilitation. The candidate wanted to have patients who would give rich information in their answers and not just yes/no answers to questions.

8.8 Conclusion

Overall findings of this study indicated that older patients in a rehabilitation unit are discharged home at an intermediate stage of recovery and may or may not feel ready to go home. As a cohort, they were pleased with the efforts and support provided by the multi-disciplinary team in the rehabilitation unit and were satisfied with the information provided to them at the time of discharge. The discharge destination and having family support on discharge may assist with feelings of readiness, emotional coping and overall quality of life.

Chapter 9: Discussion and Conclusion

With advances in medical intervention and a growing population of older adults aged 60 and over, there is a need to ensure the discharge transition from hospital to home transpires smoothly. The need to explore perceptions of readiness for hospital discharge from a patients' perspective is becoming increasingly apparent to ensure a successful discharge to home especially in complex rehabilitation populations. Investigating any potential differences in discharge planning between experienced and novice physiotherapists may also be of benefit in determining any areas for improvement in patient discharge to home.

This chapter provides an overview of the findings of the studies comprised in this thesis and then a more detailed summary of the findings of each study within this thesis. Clinical implications arising from this research program, future areas of research and strength and limitations of this program of research are also discussed.

9.1 Summary of Results

The primary aim of this thesis was to examine the perceptions of older adults discharging home to community from inpatient rehabilitation. The discharge process is complex and requires consideration of numerous factors to ensure patients, in particular older adults, returning to home in the community feel prepared, supported and physically capable to manage at home. Perceived readiness for hospital discharge of older adults was investigated in three studies of this thesis. The clinical reasoning undertaken and factors considered during discharge planning of both novice and experienced physiotherapists was also investigated in two studies of this thesis. This was undertaken to determine differences

between novice and experienced physiotherapists and identify if further training may be required to support novices who are working in such complex populations.

9.2 Summary of Main Conclusions

The key findings of each study are as follows.

9.2.1 Patient perceptions of readiness for hospital discharge

Three studies contributed to the body of knowledge around patients' perceptions of readiness for hospital discharge. The first two studies (Studies 1 and 2) were quantitative in nature and explored the transition to home from two timepoints, at discharge and one-month post-discharge. The third study (Study 5) was a qualitative design and investigated patients' perceptions of the discharge process in further depth.

Study 1 aimed to explore patient perceptions of readiness for hospital discharge at the time of discharge from hospital and to determine whether relationships existed with physical function, balance confidence and depression risk. Several self-report questionnaires were utilised in conjunction with objective outcomes measuring mobility, balance and function. The majority of older adults reported feeling ready for discharge to home. Additionally, older adults who reported higher levels of perceived readiness for discharge also reported higher levels of physical status and lower levels of expected support on discharge. The findings of Study 1 suggested the need for follow-up once discharged to home to determine any changes that may occur in the first month post-discharge.

Study 2 aimed to examine older adults after one-month at home to determine whether feelings of readiness for discharge changed retrospectively post-discharge. Study 2 also aimed to investigate whether perceptions of physical status, knowledge, coping, expected support, balance confidence and depression risk changed once home in community. Results indicated that, once home, nearly half of the older adults included in the study felt they weren't actually ready to return home at the time of discharge. Self-reports of physical status and the amount of support expected decreased once home in community and the risk of depression was slightly elevated post-discharge when compared to pre-discharge measures.

Study 5 consisted of face-to-face patient interviews and aimed to examine in depth older adults' perceptions of the discharge process both pre-discharge and again at one-month post-discharge. While only half of older adults reported being ready to return home prior to discharge, when asked again post-discharge, all participants reported they were ready to go home at the time of discharge. Feelings were positive around the activities undertaken and the support of the rehabilitation team. Those returning to live at home with family and supports in place felt positive about the transition. None of the older adults participating in the interviews were readmitted to hospital during the study.

9.2.1.1 Study 1: Are patient perceptions of readiness for hospital discharge associated with physical performance, balance confidence and depression at discharge from rehabilitation?

Study 1 quantified perceived readiness for hospital discharge, physical function, mobility, balance, balance confidence and depression risk at the time of discharge. Findings from 101 older adults undergoing inpatient rehabilitation in Australia indicated 84% of older adults discharging from rehabilitation to home felt ready to return home. Those reporting higher readiness for discharge also had higher self-reports of physical status and a lower expectation of support. Patients with higher readiness for discharge scored higher on measures of balance, mobility and perceived balance confidence. Higher scores of readiness for hospital discharge also correlated with a lower risk of depression.

Perceptions of readiness did not differ between clinical diagnostic groups, despite previous evidence suggesting differences in physical function, balance confidence and balance (Kuys *et al*., 2015) and gait speed (Kuys *et al*., 2016). One hypothesis to explain this phenomenon is the underpinning goal of rehabilitation: to achieve the best possible function prior to discharge which would suggest that all patients attain similar levels of physical functioning prior to discharge from rehabilitation.

Readiness for hospital discharge has been explored in acute medical and surgical populations (Weiss *et al*., 2007; Bobay *et al*., 2010; Brent and Coffey, 2013; Weiss *et al.*, 2019; Coffey and McCarthy, 2013). However this study, at the time of completion, was the first the candidate is aware of to explore readiness for hospital discharge in a rehabilitation

population consisting of older adults. This study was also the first to compare clinical outcome measures of physical function with patients' perceptions of readiness for hospital discharge.

9.2.1.2 Study 2: A retrospective view of patient perceptions of readiness for hospital discharge: were they really ready?

Study 2 identified changes over the first month post-discharge from inpatient rehabilitation once older adults had transitioned to home in community. Data collected from a sample of 65 older adults illustrated an overestimation of readiness for discharge, physical function and the amount of support available at home. While 84% of patients reported being ready for discharge at the time of discharge, when asked again retrospectively at one-month post-discharge, only 51% reported they were actually ready. Previous research has expressed the need to ensure rehabilitation populations are physically and mentally prepared for the demands of life at home (Glans *et al.*, 2020).

Scores of physical status and expected support decreased significantly post-discharge which is of concern due to recent findings that physical status and readiness for discharge may be indicators of the ability to manage at home post-discharge (Galvin *et al.,* 2017; Gledhill *et al.,* 2021). While post-discharge scores for balance confidence were lower than those at discharge (baseline), overall scores for balance confidence were low for the cohort as a whole. These results may raise the need for future study due to the known relationships between balance confidence and future falls (Cleary and Skornyakov, 2017; Lajoie and Gallagher, 2004) .

Lastly, though not statistically significant, the risk of depression increased slightly once older adults were home in the community for one-month and may also need to be investigated further. Depression is known to have positive correlations with falls (Deandrea *et al.*, 2010; Hull *et al.,* 2013) and early unplanned readmission to hospital (Mast *et al*., 2004; Pederson,Majumdar *et al.*, 2016; Pederson, Warkentin *et al.*, 2016).

9.2.1.3 Study 5: Patient perceptions of discharge: the before and after

Patient interviews conducted in Study 5 provided more depth of understanding of the patients' perceptions of the discharge process from both discharge and one-month post-discharge timepoints. Post-discharge coping difficulties have been shown in past literature (Fitzgerald Miller *et al.,* 2008). Older adults in this study were questioned post-discharge about retrospective readiness for discharge and all reported feeling they were ready to return home at the time of discharge.

Barriers to discharge were identified as activities patients could no longer engage in (i.e. driving, accessing public transportation) and sub-optimal physical function and mobility which has been previously shown to have predictive capacity for unplanned readmission (Fisher *et al.*, 2013). Conversely, positive influences on the discharge process included supportive rehabilitation teams, the provision of information, inclusion in the discharge planning process and, similar to previous research, having someone to support them at home post-discharge (Gledhill *et al.*, 2021; Siow *et al.*, 2019). All patients reported physical improvement from admission to discharge and further physical improvement again post-

discharge. Patients reported satisfaction with having their questions answered and, similar to previous research, also had positive feelings around quality of life and the anticipation of further future improvements (Poochikian-Sarkissian *et al.,* 2010).

9.2.2 Physiotherapists perceptions of discharge planning from rehabilitation

Studies 3 and 4 aimed to investigate the factors considered during discharge planning by experienced and novice physiotherapists. Findings indicate that experienced physiotherapists are more thorough in their assessments and planning and use previous experience to inform the discharge plan from a holistic perspective. Novice physiotherapists used a less comprehensive manner and engaged in discharge planning from more of a checklist approach. Novice physiotherapists were also more likely to forget aspects of the discharge or get caught out with last minute scrambles to arrange the required services.

9.2.2.1 Study 3: Clinical reasoning of experienced physiotherapists: a focus group

The focus group conducted in Study 3 consisted of six experienced physiotherapists each with over 5 years working in rehabilitation. Physiotherapists have been shown previously to consider multiple aspects of discharge that are non-physical in nature (Pashley *et al.,* 2010). Experienced physiotherapists in this study considered many different aspects of discharge when planning for older adults to return to home in community. Two main themes emerged from the focus group conducted including capacity and future planning.

The major theme of capacity was expanded into three sub-themes: physical, cognitive and patient specific characteristics. Physiotherapists are known to work with patients through functional task practice (Perry *et al.*, 2019; Siemonsma *et al*., 2018) and perform assessments of function (Thonnard and Penta, 2007). They have also been shown to undertake clinical reasoning for a variety of factors associated with discharge planning that are non-physical in nature (Jette *et al.,* 2003; Pashley *et al.*, 2010). The results of this study are in keeping with previous literature which indicates that much more than physical function is considered when discharge planning (Pashley *et al.*, 2010; Grimmer *et al.*, 2004). Experienced physiotherapists in this study indicated that cognition may be a positive influencer for discharge in the case of decreased mobility, or a negative barrier when safety concerns may limit discharge planning.

The theme of future planning and resulting sub-themes illustrate the multi-factorial approach experienced physiotherapists take when considering the likelihood of successful discharge and the individual patients' needs to reduce the risk of unplanned readmission. This complex and multi-factorial discharge planning approach by physiotherapists has been illustrated previously (Matmari *et al.,* 2014).

9.2.2.2 Study 4: Novice physiotherapists clinical reasoning and decision making in rehabilitation: what do they know

Study 4 found that during discharge planning, novice physiotherapists considered both physical and non-physical factors to inform the discharge plan similar to their more experienced counterparts in Study 3. Novice physiotherapists however, were more likely to

forget aspects of discharge until the last minute and were less comprehensive about long term planning than experienced physiotherapists. Previous literature has indicated differences in the clinical reasoning of expert versus novice physiotherapists in a variety of settings (Jensen *et al.*, 1992; Jensen *et al.,* 2000; Doody and McAteer, 2002); though this study was one of the few to explore reasoning pertaining to discharge planning of older adults being discharged from hospital rehabilitation.

Previous studies differentiating between experienced and novice physiotherapists have been conducted (Case *et al.,* 2000; Doody and McAteer, 2002; Jensen *et al*., 1992) largely in acute care settings. To the candidate's knowledge, there is only one other set of studies that have taken place in a rehabilitation setting (Wainwright *et al.*, 2010; (Wainwright *et al.*, 2011) where discharge planning is known to be complex (Bauer *et al.*, 2009). While novice physiotherapists identified many aspects of discharge that required consideration, they also appeared to use more of a checklist approach and reported using a discharge planning checklist to ensure all items were addressed. The implications of this basic level of competency suggest there may be a need for increased support and training as well as protocols to ensure physiotherapists are providing the most comprehensive discharge planning possible. This would ideally ensure that older adults discharging from rehabilitation would have equally comprehensive and organized discharge plans regardless of the experience of their treating physiotherapist.

9.3 Clinical Implications

A number of clinical implications have emerged from this program of research. It is clear that patient perceptions of readiness for discharge is an important clinical concept that physiotherapists, and all stakeholders in rehabilitation, should be aware of and measure. It appears that older adults may overestimate their readiness for discharge at discharge from hospital and have unrealistic expectations regarding the level of support needed or available to them once home in the community. The importance of the transition to home as well as some limitations in services to support this transition were noted. These will be discussed.

9.3.1 Perceived readiness is important for successful discharge

The concept of patient perceptions of readiness for discharge is an important clinical concept. A need exists for physiotherapists, and all stakeholders in rehabilitation settings, to be aware of the patients' feelings of readiness prior to discharge. The relationship between feelings of preparedness and successful discharge or unplanned readmission have been illustrated (Bobay *et al.*, 2010; Brent and Coffey, 2013; Coffey and McCarthy, 2013; Considine *et al.*, 2020). Additionally, the importance of ensuring patients feel ready for the transition from hospital to home is paramount due to the relationships displayed between decreased readiness for discharge and subsequent unplanned readmission to hospital (Coffey and McCarthy, 2013; Considine *et al.*, 2020; Gledhill *et al.*, 2021; Siow *et al.*, 2019).

The readiness for hospital discharge scale hadn't been used in geriatric rehabilitation settings prior to the commencement of this body of research, though the PhD Candidate purports its use would be beneficial in addressing the complex discharge needs of this

population. Discharge needs may include physical testing in conjunction with communication around self-reports of function, coping and perceived readiness. Better communication is needed between treating teams, frail older adults and their families and carers (Krook *et al.*, 2020) regarding discharge preparedness and preparations.

The need to explore patients' perceptions and feelings of readiness is important to ensure that a patient-centered model of care is employed (Krook *et al.*, 2020; Poochikian-Sarkissian *et al.*, 2010). Recent evidence indicates a discrepancy in estimates of readiness, where treating team members overestimate patients' perceptions of readiness in nearly half of all discharges (Manges et al., 2021). This makes it especially important to assess and consider the perceptions of the patients themselves. While some treating team members may underestimate readiness, nurses' perceptions of the readiness of patients tend to be more strongly associated with post-discharge service utilization and readmission risk (Weiss *et al.*, 2010; Weiss *et al.*, 2014).

9.3.2 Older adults overestimate readiness for discharge

Clinical reasoning around the discharge process from multiple aspects is important in light of the findings of this program of research that older adults tend to overestimate their readiness for hospital discharge. The risk of overestimating overall readiness to return home and physical capabilities in conjunction with relatively low balance confidence, less support than expected and increased risk of depression sets older adults up for a difficult transition to home.

Findings from the patient interviews in Study 5 (Chapter 8) indicated that patients are eager to return to their own familiar surroundings and the family that may await them at home. This may lead to feelings of anticipation to return to home in community and to the comfort of their own home (Wiles *et al.*, 2012) as well as supportive family members (Siow *et al.*, 2019). In the excitement to return home, it appears that older adults may overestimate their capabilities and underestimate the challenges of living at home in the community either with or without family to support them. Clinically and in the data collected in this thesis, it appears that older adults assume there will be high levels of support once they discharge home, however for a variety of reasons, the family and carers may not be as readily available to assist as the patient anticipates.

The implications of this for physiotherapists, and clinicians in general are important to consider and may affect discharge plans and timelines depending on the availability of family and carers to provide informal support. These findings further support the need for effective communication between the multidisciplinary team, patients and their families and carers (Bauer *et al.*, 2009; Becker *et al.*, 2021; Bucknall *et al.*, 2020; Considine *et al.*, 2020; Gane *et al.*, 2022).

9.3.3 Transition to home is a critical time for older adults after rehabilitation

The transition to home period is a critical time for older adults typical of rehabilitation populations. Investigations around the causes and risk of unplanned readmission within the first month post-discharge are well documented (Bauer *et al.*, 2009; Becker *et al.*, 2021; Bobay *et al.*, 2010; van Walraven *et al.*, 2011; Weiss *et al.*, 2019; Zanocchi *et al.*, 2006). The

discharge planning process is likely to be more complex for older adults undergoing rehabilitation than the general population. This may be due to a combination of factors including the likelihood of comorbidities (Di Libero *et al.*, 2001), poor coping post-discharge (Fitzgerald Miller *et al.*, 2008), the need for effective and efficient discharge planning processes (Nosbusch *et al.*, 2011) and the importance of ensuring patient readiness for discharge (Coffey and McCarthy, 2013; Weiss *et al.*, 2010).

Inpatient rehabilitation settings are typically comprised of supportive multidisciplinary teams working together to achieve the best possible outcomes for each individual patient (Coleman *et al.*, 2012; Wade, 2020). Stays in rehabilitation include psychosocial support while performing exercise and practicing tasks (Wade, 2020). Additionally, patients who complete geriatric rehabilitation have been shown to exhibit less functional decline at discharge and less likelihood of admission to aged care facility one year post-discharge (Van Craen *et al.*, 2010). There may however, be gaps in care when older adults transition from inpatient rehabilitation to home (Naylor and Keating, 2008). Investigating this transition from rehabilitation to home and the multifactoral aspects of discharge from patient perceptions and mobility to clinical reasoning is important to better understand any potential areas of improvement for the future.

Adherence to treatment regimens may be affected by the effectiveness of communication at the time of discharge (Becker *et al.*, 2021). The likelihood of physical decline over time in a frail and elderly population with comorbidities raises concerns over the risk of readmission should treatment plans and exercise prescriptions not be adhered to. Clinicians need to be aware that older adults often have poor comprehension of their hospitalisation (Sommer *et*

al., 2018) and may require both verbal and written information to increase adherence to treatment regimens (Raynor, 2020; VanSuch *et al.*, 2006).

9.3.4 Discharge planning requires complex clinical reasoning

Rehabilitation populations are complex with numerous factors to consider for discharge planning (Pashley *et al.*, 2010; Gledhill *et al.*, 2021; Goncalves-Bradley *et al.*, 2022). Physiotherapists are known to progress and assess mobility and other factors that influence discharge (Pashley *et al.*, 2010; Perry *et al.*, 2019). While it is intuitive that experienced physiotherapists would be more comprehensive with treatment and assessment, this study and others have found discrepancies between experienced physiotherapists and their novice counterparts (Jensen *et al.*, 2000; Doody and McAteer, 2002).

The differences found in this program of study included last minute scrambling to organise services, and ensure smooth transitions by novice physiotherapist. The use of a discharge checklist sheet to ensure nothing was missed was another aspect of discharge planning that novices reported, while it is hypothesised that the experienced physiotherapists have performed so many discharges during their time that the checklist is something they complete automatically without an external reminder required. Experienced physiotherapists also considered the disease pathology and likely progression and thus incorporated the future needs of the patient into their discharge planning. Novice physiotherapists made no mention of likely future deterioration. Lastly, while not stated outright, the undercurrent from experienced physiotherapists was one of support to support the older adult to remain living independently in the community and maintain as

much independence in decisions around their care and life as possible. The novice physiotherapists made several comments implying a lack of respect for the older adult as a person and more so as a problem to manage. There were undercurrents of impatience with the process of ageing and the patients themselves.

The findings of the focus groups conducted in this thesis bring to light the need for novice physiotherapists to have support and mentoring. Putting systems and checklists in place to ensure nothing is forgotten is one way to support the clinical reasoning required for complex discharge planning. Creating guidelines on the progression from admission to discharge and things to consider along the way may be of benefit. Regular mentoring sessions with experienced physiotherapists (in a similar fashion to regular meetings when completing student placements) may also be of benefit especially in the case of difficult discharges. If novice physiotherapists are unable to complete comprehensive discharge planning for older adults in rehabilitation, the patient will be the one ultimately paying the price with a less than ideal discharge transition or even unplanned readmission to hospital.

9.3.5 Australian Service Limitations

The Australian health public care system is governed on a federal level through a system called Medicare system (AUSGOV, 2022). This entitles Australians of all ages to health care that is paid for through taxes and levies and managed with federal budgets (AUSGOV, 2022). The hospital systems, however are controlled by the state in which they reside. This can create confusion, loss of follow up and sub-optimal or sub-therapeutic intervention once older adults are discharged to home in the community. Should the patient require advanced

medical treatment only provided at a hospital inter-state and then be discharged to home, the hospital or rehabilitation facility attended may not have any discharge follow-up funding or services available to older adults once home.

While some states have transitional care programs that last 12 weeks, others have programs that last 8 weeks in duration (HEALTH, 2019). The entitlements and services provided are also at the discretion of the hospital system in each respective state. This means that some older adults being discharged from inter-state hospitals (which may only be 10km from where they reside) aren't entitled to any form of follow up therapy through the public health care system. This is a common problem as there are only a certain number of dedicated rehabilitation units, and not every hospital has a rehabilitation unit.

There is a gap in service provision to follow at risk older adults from rehabilitation to home and to then continue to monitor their progress and potential decline. Of great benefit would be a commonality between all publicly funded hospital systems regardless of state to ensure all older adults receive the interventions and support required once discharged to home in community. In 2017 a Commonwealth Australian government initiative called My Aged Care was introduced (MAC, 2022). This commonwealth funded government assistance program is now well established and works on a nationwide level to assist older adults to remain in their own homes in community. Physiotherapists and allied health professionals in the hospital system may refer patients directly to the service prior to discharge to home, the patient may call and request services or community General Practitioners may also refer patients to the My Aged Care system. The My Aged Care system has been fundamental in supporting older adults in the home and reducing the need for aged care facility admissions.

However, many older adults may not be aware of the system, its funding, or how to access the services as has been anecdotally noted by the PhD Candidate while treating older adult populations in the community. Likewise, many allied health practitioners are unaware of the system and how refer patients to access the funding and services.

There exists a need to disseminate information from the government bodies to the health care professionals that refer patients for the services provided. Australia has billions of dollars in funding allocated to help older adults remain living at home in the community for as long as possible and to reduce the burden on the hospitals and aged care facilities. Unfortunately, the older adults who require the services and assistance are unaware of its existence and how to access it. And on the opposite end of the spectrum, the allied health practitioners who can refer older adults to the services they require are unaware of the system all together.

9.4 Future Research

Patient perceptions of readiness for discharge is an area of study that has grown immensely since the commencement of this thesis. The need to ensure patients feel prepared for discharge to home is paramount in preventing unplanned readmissions and giving older adults the best possible chance at successful discharge. This program of research contributes to the evidence base for older adults undergoing rehabilitation and may be generalised to rehabilitation populations outside of Australia.

9.4.1 Investigation of rehabilitation populations

This research highlights the need to investigate rehabilitation populations further to determine whether the findings of these studies may be indicative across populations of patients. The three condition groups in this research (Study 1) displayed no significant differences in regards to readiness for discharge, however it would be beneficial to determine whether differences exist for patient with neurological disease, rapid onset of pathology or injury or deteriorating conditions.

In addition to investigating differing patient population groups, following up a larger cohort would be beneficial to determine whether the findings of this small study is indicative of larger population groups and generalisable. By investigating a larger cohort it may be possible to determine whether balance confidence, which has been shown to predict the risk of a fall in community dwelling older adults, remains low at discharge and post-discharge and to see if balance confidence decreases further after a longer transition period. A larger cohort may also give further insight into the increased risk of depression post-discharge in community dwelling older adults and determine whether, with transition times great then 1-month the risk of depression increases further still. Investigating discharged rehabilitation populations at one-month, three-months, six-months and even twelve-months post-discharge would give further insight into physical function, balance confidence and depression risk over time. These follow-up periods are likely to be challenging due to the frail nature of rehabilitation populations with comorbidities and community dwelling elderly.

9.4.2 Increased knowledge of government assistance programs

At the time of commencement of this research program, My Aged Care was not yet in existence and thus each state and subsequent hospital were responsible for determining follow-up care funding use post-hospitalisation. The My Aged Care system has now been available for 5 years for adults aged 65 and over who live in the community. Despite this, many hospital-based physiotherapists are still largely unaware of the availability of the community support and associated funding accessible to older adults. It is thus reasonable to suggest that referrals for older adults who required assistance upon discharge may not have occurred. Awareness of community-based government funding from the perspective of allied health professionals, patients and their families is important to optimise the transition to home for older adults discharging from inpatient rehabilitation. The Commonwealth Government is currently undertaking surveys to determine the best way to disseminate information to allied health care providers in an attempt to improve referral of older adults to the services they require.

9.4.3 Screening and referral to government funded support programs

Screening to identify a need for community-based services was not commonly undertaken when this research was conducted. However, medical practices in the community perform yearly health checks for older adults as part of routine care through the Medicare system. While assessing overall medical status, General Practitioners or trained Nurse Practitioners could also perform a simple outcome measure such as a Short Performance Physical Battery (Guralnik et al., 1994) to determine the physical status of older adults living in the

community and flag any decline in balance, mobility and function. This would enable timely and efficient standardised reviews and referral to the required health care services.

The use of the MRHDS tool as a component of routine discharge measures prior to returning home to the community, may also help allied health practitioners working in geriatric rehabilitation to flag those at risk of unplanned readmission and determine interventions that will assist with successful discharge. Allied health practitioners in rehabilitation are able to refer patients to My Aged Care for assessment with an aim to receive services once back in the community. With use of the MRHDS to determine whether older adults feel prepared and further identify which domains they may require assistance (physical, emotional, support or knowledge of treatment), referral to the appropriate services may be expedited and may reduce the incidence of avoidable readmissions in community dwelling older adults.

This program of study used the MRHDS tool as consistently as possible in line with the validated RHDS version. However, more work validating it's use in rehabilitation populations would be beneficial. Also of benefit may be to explore the pre-discharge and post-discharge use of the MRHDS when compared with early readmission to hospital to determine any predictive capacities of the scale.

9.5 Strengths and Limitations

This program of research was conducted and completed over a period of 10 years for a variety of reasons. Every effort was made to ensure consistency of design, analysis and

interpretation of findings and to ensure rigour of the investigative process. The project was originally commenced as a quality review to address the growing concern of early unplanned readmission to hospital and subsequently rehabilitation in an ageing population. While many things have changed over the 10 year period of study, the pattern of early unplanned readmission in older adults in rehabilitation with complex discharge planning requirements has not changed. There still exists a clinical need to ensure successful transition to home of older adults as well as to explore factors that may be associated with readmission.

The primary tool used for this thesis, the readiness for hospital discharge scale, was used with permission of the original author. The scale was originally created in a 23-item format which was provided to the PhD Candidate by the original author (Weiss and Piacentine, 2006). Since this program of study has commenced, the original author and colleagues have further investigated the uses and created a short form version of the scale (Weiss *et al.*, 2014; Mabire *et al.*, 2015; Aldughmi *et al.*, 2021). The original 23-item format was modified with permission of the original author to include several questions specific to rehabilitation populations however these additional items have not yet been validated. The scale was created and validated to investigate readiness for discharge from acute hospital populations and hasn't been used in sub-acute rehabilitation populations prior to the commencement of this program of study. While every effort was made to use the scale consistently, more work is likely required in rehabilitation populations and the validation of the additional questions may be of benefit.

An additional limitation to this program of study is that it was commenced years prior to Covid-19, thus the climate in hospital and rehabilitation settings has changed drastically since the study was designed, implemented and data collected. While this is definitely a limitation, it may also be seen as a strength. Due to the completion of data collection occurring prior to coronavirus disease 2019 (Covid-19), there is now a baseline for patient perceptions of readiness for hospital discharge in older adults undergoing rehabilitation in Australia in the past decade. There exists a need to determine if the findings from this thesis have changed since the occurrence of Covid-19 and the tremendous impact on health care systems (AIHW, 2022).

The original project was originally designed simply as a quality research project and there was no intentional use of a theoretical framework to guide the program design, this can be viewed as a limitation of the study design. There also now exists a model for discharge preparation (Weiss et al., 2015) which would have beneficial to use in the design and implementation phases of this program research. If future stages of investigation are to be undertaken, the model for discharge preparation (Weiss et al., 2015) would be an ideal basis to inform the research design. Further investigation of the discharge planning consideration of a multidisciplinary team involved in rehabilitation populations would be beneficial to as another limitation of this study is that despite there being various professional disciplines involved in a rehabilitation, only physiotherapists were identified for this research.

Further strengths of this thesis include the comprehensive multi-method design and marrying of quantitative and qualitative studies within one program of research (Onwuegbuzie and Leech, 2005; Creswell and Plank Clark, 2007; Kelle, 2006). The

quantitative data illustrated a concerning trend regarding overestimation of perceived readiness for discharge, physical capability and expected support with slight increase in depression risk. The need to investigate these findings further drove the addition of qualitative interviews of patients which allowed for more in-depth exploration of patients' perceptions of the discharge process and areas for improvement.

Including both patient and physiotherapists' perspectives of the discharge process and transition added support to the theory that physiotherapists consider many different aspects of patients' needs for discharge that fall outside the physical outcome testing they are best known for assessing (Pashley *et al.*, 2010). The focus groups of both novice and experienced physiotherapist focus groups ensured that any differences in clinical reasoning and approach to discharge planning may be identified and thus addressed as required. While the focus groups were each conducted to data saturation, the sample size was small due to the availability of novice and experienced physiotherapists on rotation in the rehabilitation unit at the time. It is possible that further themes may have emerged with more focus groups but as both focus groups continued until no new data was reported and themes were consistent across both groups, it seems unlikely that further focus groups would have changed the main themes that emerged.

9.6 Conclusion

In conclusion, the topic of patient perceived readiness for hospital discharge has gained momentum over the past decade. There is a need to ensure that the growing population of older adults worldwide are ready to return home and live in the community. Readiness may

be mental, physical, social or in terms of support required from both formal and informal sources. This program of study has found that older adults tend to overestimate their readiness to return home, physical capabilities, and the amount of support available. The risk of depression once home in the community also increased. This triad of overestimated physical capacity, underestimated amount of support and increased risk of depression is something that needs further investigation to ensure smooth transitions for at risk community dwelling older adults.

Physiotherapists are effective and comprehensive allied health practitioners who work in with multidisciplinary teams in rehabilitation. They explore many facets of discharge when clinically reasoning and discharge planning for complex older adults in rehabilitation. While there appears to be a base level of knowledge and competency, novice physiotherapists may require additional mentoring, guidelines and assistance from more experienced physiotherapists to ensure the best possible outcomes for older adults under their care.

Lastly, at the commencement of this program of study, the candidate was attempting to prove the need for a program to provide assistance in the home for older adults residing in the community in an attempt to prevent avoidable and unplanned hospital readmissions. During the course of this program of study, the Commonwealth Government of Australia created and implemented exactly such a program known as My Aged Care. The primary aim of this program is to assist older adults to remain living in their own homes as long as possible and to reduce the burden on the medical system and aged care facilities. While the initiative is applauded and much needed, there is a communication gap between the allied health care practitioners who can refer older adults for these services and the actual service

provision. Better communication is required between government bodies who fund the services, service providers, allied health practitioners and the older adults themselves who utilise the services.

This thesis has illuminated important issues, which will only become more pertinent as the population of older adults increases globally in years to come. However, there is still much work to be done to ensure older adults are supported during rehabilitation, during the transition from hospital to home and, perhaps even more so, once home in the community to prevent early unplanned readmission to hospital.

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Appendices

Appendix 1: Metro South Human Research Ethical Approvals

Metro South Human Research Ethics Committee approval

Enquiries to:	Shona Christie
Phone:	(07) 3176 7672
Fax:	(07) 3176 7667
Our Ref:	HREC/10/QPAH/193
E-mail	PAH_Ethics_Research@health.qld.gov.au

19 October 2010

Ms Jacqui Mitchell
Physiotherapy Department
Princess Alexandra
Hospital Ipswich Road
WOOLLOONGABBA QLD
4102

Low Risk Review Approval – PRINCESS ALEXANDRA HOSPITAL

Dear Ms Mitchell

HREC Reference number: HREC/10/QPAH/193
Project title: Preparation for Discharge from a Rehabilitation Unit: Patient & Carer/Family Perceptions and Functional Outcomes

I am pleased to advise that the above protocol has been recommended for executive approval by the Chair and Sub Committee of the Metro South Health Service District Human Research Ethics Committee on 18 October 2010, as a Low Risk research protocol. The Committee is duly constituted, operates in accordance and complies with the current National Health and Medical Research Council's *National Statement on Ethical Conduct in Human Research (2007).*

On the recommendation of the Human Research Ethics Committee, approval is granted for your protocol to proceed for Queensland Health staff. The approval for Bond University staff to conduct research for this protocol is subject to a Sub-Contract Agreement that must be provided prior to commencement on the study.

This approval is subject to researcher(s) compliance throughout the duration of the research with certain requirements as outlined in the *National Statement on Ethical Conduct in Human Research (2007)* and the *Australian Code for the Responsible Conduct of Research.*

The following links have been provided for your convenience:
http://www.nhmrc.gov.au/publications/synopses/e72syn.htm
http://www.nhmrc.gov.au/publications/synopses/r39syn.htm

The following documents have been approved for use in relation to the above protocol.

Document	*Version*	*Date*
Application: Low Risk		19 August 2010
Patient Information Sheet/Consent Form	2	12 October 2008

Some requirements are briefly outlined below. Please ensure that you communicate with the HREC on the following:

- ***Protocol Changes:*** Any changes made to the protocol require HREC approval.
- ***Problems and Concerns:*** The HREC must be informed of any problems that arise during the course of the study which may have ethical implications. Where serious adverse events (SAEs) are encountered, the events must be notified to the HREC as soon as possible. To assist with SAE reporting obligations a template is available on the MSHSD HREC website.
- ***Lapsed Approval*:** If the study has not commenced within a twelve month period, approval will lapse requiring resubmission of the study to the HREC.
- ***Annual Reports:*** All studies are required by the NHMRC to be reviewed annually. To assist with reporting obligations an Annual Report template is available on the MSHSD HREC website. This form is required to be completed and returned to the HREC within the 12 month reviewing period.

As this research involves the recruitment of patients from the Metro South Health Service District (MSHSD), it is my responsibility to remind you of your ongoing duty of care for all people recruited into projects or clinical trials whilst public patients. All conditions and requirements regarding confidentiality of public information and patient privacy apply. You are required to comply at all times with any application requirements of Australian and Queensland Laws including the Health Services Act, the Privacy Act, Public Health Act (2005) and other relevant legislation, ethics obligations and guidelines which may be applicable to the MSHSD from time to time including, without limitation, any requirement in respect of the maintenance, preservation or destruction of patient records.

When the study involves patient contact, it is your responsibility as the principal investigator to notify the relevant consultant and request their approval.

Should you have any problems, please liaise directly with the Research Ethics Manager early in the program.

A copy of this letter should be presented when required as official confirmation of the approval of the Metro South Health Service District Human Research Ethics Committee.

We wish you every success in undertaking this

research. Yours sincerely,

Dr David Theile Snr

DISTRICT CHIEF EXECUTIVE OFFICER METRO SOUTH

Metro South Health

Enquiries to: Metro South Hospital and Health Service
Human Research Ethics Committee
Phone: 07 3443 8049
Fax: 07 3443 8003
HREC Ref: HREC/10/QPAH/193
E-mail: PAH_Ethics_Research@health.qld.gov.au
Amendment AM05

Ms Jacquelin Mitchell
Physiotherapy Department
Building 7 GARU
Princess Alexandra Hospital
Woolloongabba QLD 4102

Dear Mrs Mitchell,

HREC Reference number: HREC/10/QPAH/193
Protocol title: Preparation for Discharge from a Rehabilitation Unit: Patient & Carer/Family Perceptions & Functional Outcomes.

Thank you for submitting the following documents for the above research project. I am pleased to advise that the following documents have been reviewed and approved

Document	Version	Date
Notification of Amendment: Inclusion interviews with carers		17 June 2014
Updated Low/Negligible Risk (LNR) research application form		Received 30 June 2014
Participant Information and Consent Form		17 June 2014
Carer Information and Consent Form		17 June 2014
Therapist Information and Consent Form		17 June 2014
Patient Interview Questions		17 June 2014
Family/Caregiver Interview Questions		17 June 2014
Clinician Interview Questions		17 June 2014

The Metro South Hospital and Health Service HREC is constituted and operates in accordance with the National Health and Medical Research Council's *"National Statement on Ethical Conduct in Human Research (2007), NHMRC and Universities Australia Australian Code for the Responsible Conduct of Research (2007)* and the "*CPMP/ICH Note for Guidance on Good Clinical Practice".*

This will be ratified by the HREC at its 5th August 2014 meeting.

Please provide a copy of this approval letter to the Research Governance Office.

It should be noted that all requirements of the original approval still apply. Please continue to provide at least annual progress reports until the study has been completed.

If you have any queries please do not hesitate to contact the Human Research Ethics Committee office on +617 3443 8049.

Queensland Government

Yours sincerely,

[redacted]

A/Prof Scott Campbell
Deputy Chair
Metro South Hospital and Health Service
Human Research Ethics Committee (EC00167)
Centres for Health Research
Princess Alexandra Hospital
Woolloongabba QLD 4102

9/7/14

C.c. Sarah Mattin, Associate Investigator, Australian Catholic University

Appendix 2: ACU Human Research Ethics Approval

Kylie Pashley <Kylie.Pashley@acu.edu.au>

To:
- Nancy Low Choy <Nancy.LowChoy@acu.edu.au>;
- Sarah Mattin

Mon 2/18/2013 3:38 PM
Dear Nancy,

Principal Investigator: Nancy Louise Low Choy
Student Researcher: Sarah Mattin
Ethics Register Number: 2012 286Q
Project Title: Patient Perceived Readiness for Discharge
Risk Level: Multi Site
Date Approved: 18/02/2013
Ethics Clearance End Date: 31/12/2013

The ACU HREC has considered your application for ethics approval 2012 286Q Patient Perceived Readiness for Discharge.

As this application already has ethics approval from Metro South Princess Alexandra Hospital HREC, ACU HREC accepts the approval with no additional requirements, save that ACU HREC is informed of any modifications of the research proposal and that copies of all progress reports and any other documents be forwarded to it. Any complaints involving ACU staff must also be notified to ACU HREC (National Statement 5.3.3)

We wish you well in this research project.

Regards,

Kylie Pashley
Ethics Officer | Research Services
Office of the Deputy Vice Chancellor (Research)
res.ethics@acu.edu.au

2012 286Q Extension approved

Ms Kylie Pashley <Kylie.Pashley@acu.edu.au>

to Prof, Sarah, me

Dear Nancy,

Ethics Register Number : 2012 286Q
Project Title : Patient Perceived Readiness for Discharge
Data Collection Date Extended : 31/12/2015

Thank you for returning the Ethics Progress Report for your project.

The Deputy Chair of the Human Research Ethics Committee has approved your request to extend the period of data collection. The new expiry date for data collection is the 31/12/2015 .

We wish you well in this ongoing project.

Kind regards,
Ms Kylie Pashley

Ethics Officer | Research Services
Office of the Deputy Vice Chancellor (Research)
Australian Catholic University
PO Box 456, Virginia, QLD, 4014
T: 07 3623 7429 F: 07 3623 7328

THIS IS AN AUTOMATICALLY GENERATED RESEARCHMASTER EMAIL

2012 286Q Modification - PAH Approved

Ms Kylie Pashley <Kylie.Pashley@acu.edu.au>

to Prof, Sarah, me

Dear Nancy,

Ethics Register Number : 2012 286Q
Project Title : Patient Perceived Readiness for Discharge
End Date : 31/12/2015

Thank you for submitting the request to modify form for the above project.

The Chair of the Human Research Ethics Committee has approved the following modification(s):

Notation of approval of modification by the PAH HREC dated 9/7/2014.
- additional focus groups, new information letters and consent forms, interview schemes for patient and caregivers and physiotherapist focus groups.

We wish you well in this ongoing research project.

Kind regards,
Ms Kylie Pashley

Ethics Officer | Research Services
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Australian Catholic University
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THIS IS AN AUTOMATICALLY GENERATED RESEARCHMASTER EMAIL

Appendix 3: COREQ Checklist

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the inter view or focus group?	
Duration	21	What was the duration of the inter views or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.