Examining the Hospital Elder Life Program in a Rehabilitation Setting:

A Mixed Methods Evaluation

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

Delirium is a neuropsychiatric syndrome that is common among older adults in various care settings. It is consistently associated with increased rates of morbidity, mortality, long-term care placement and longer, costlier hospitalizations. Primary prevention may be the most effective strategy to reduce the incidence of delirium. The Hospital Elder Life Program (HELP) was developed to prevent delirium and functional decline in hospitalized older patients and has been shown to be effective in several acute care hospital units. To date, the effectiveness of the HELP had not been examined in a post-acute rehabilitation hospital setting. There is also limited research on patient, caregiver, volunteer and staff perceptions of, and satisfaction with, the HELP. This evaluation project is a pilot feasibility study to examine the implementation of the HELP in a rehabilitation setting using a mixed methods (quantitative and qualitative) approach. Data were collected through patient outcome measures, caregiver self-reported questionnaires, focus group interviews and individual interviews. Patients, caregivers, volunteers, and staff members involved with the program provided information to help determine the usefulness, feasibility, and satisfaction with the HELP in a rehabilitation hospital setting. Patients who received the HELP showed greater improvement on cognitive and functional outcomes and a shorter average length of stay than those who did not receive the program. Participant groups discussed perceived barriers, benefits, and recommendations for further implementation of the HELP. This study adds to the limited research on delirium in post-acute rehabilitation settings. This is the first study to examine the effectiveness of the HELP in a rehabilitation setting, and to explore patient, caregiver, volunteer, and staff perceptions of, and satisfaction with, the HELP.

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CHAPTER ONE

Introduction

1.2 Overview

Delirium is defined as a "common neuropsychiatric syndrome characterized by disturbance in attention and consciousness that develops over a short period of time and in which the symptoms tend to fluctuate during the course of the day" (American Psychiatric Association, 2013, p. 599). Disturbance in attention and awareness, altered consciousness, impaired cognitive function, perceptual abnormalities, external causation, and a fluctuating course with rapid onset have been identified as the core features of delirium (Milisen et al., 2001; Burns et al., 2004; Siddiqi et al., 2006; Blazer & van Nieuwenhuizen, 2012). Additional features include impairment of memory, language and psychomotor behaviour; as well as illusions, delusions and hallucinations (Burns et al., 2004); and disturbance of the sleep-wake cycle (Meagher, 2001; Young & Inouye, 2007).

Most common among older adults in various care settings (Sandberg et al., 1999; Ouldred & Bryant, 2011), delirium is consistently associated with increased rates of morbidity, mortality, long-term care placement and longer, costlier hospitalizations (Rockwood, 1990; Inouye et al., 1993; Sandberg et al., 1999; Inouye et al., 1999; McAvay et al., 2006; Siddiqi et al., 2006; Tabet & Howard, 2009). Delirium is however a potentially preventable condition (Inouye et al., 1999; Young & Inouye, 2007; Jones et al., 2010; Ouldred & Bryant, 2011; Siddiqi et al., 2011) and evidence shows that primary prevention is the most effective strategy to reduce the overall incidence of inpatient delirium, decrease length of stay, and enhance functional recovery (Inouye et al., 1993; Milisen et al., 2005; McAvay et al., 2006; Tabet & Howard, 2009).

Inouye and colleagues (1999) developed a delirium prevention model of care translated into routine practice as the Hospital Elder Life Program (HELP) (Young & Inouye, 2007; Siddiqi et al., 2007). The HELP is a multicomponent intervention that aims to prevent delirium and functional decline in hospitalized older adults (Inouye et al., 2000; Inouye et al., 2006; Heckman et al., 2011). It offers practical interventions that target six risk factors for delirium, including an orientation protocol targeting cognitive impairment, a sleep protocol to promote sleep enhancement, early mobilization and minimum restraints to prevent deconditioning, adaptive equipment and aids for vision optimization, wax removal and aids for the hearing impaired, and attention to nutrition and hydration. Implemented by an interdisciplinary staff and trained volunteers within existing hospital units, the HELP does not require a specialized geriatric unit (Inouye et al., 1999; Inouye et al., 2000; Sandhous et al., 2010; Heckman et al., 2011).

The HELP has been shown to be effective for the prevention of delirium, cognitive and functional decline, and other common geriatric complications of hospitalization (Inouye et al., 2000). Studies have also shown the program to be effective in improving quality of care, enhancing patient (Inouye et al., 2000), family and nursing satisfaction with care (Rubin et al., 2011), and reducing length of stay (Inouye et al., 2006; Heckman et al., 2011). The HELP has now been disseminated to more than sixty hospitals in the United States, Canada, United Kingdom, Australia, and Taiwan (Rubin et al., 2011) on medical, geriatric, and surgical units (Rizzo et al., 2001; Leslie et al., 2005; Rubin et al., 2006; Inouye et al., 2006; Chen et al., 2011). To date, the HELP has not been examined in a rehabilitation hospital setting.

Following a consultation process with health care providers in the Waterloo-Wellington region of southern Ontario (Heckman et al., 2013), Grand River Hospital (GRH) implemented the HELP on Medical, Surgical, and Restorative Care Units. The Restorative Care Unit located in the Complex Continuing Care service at the Freeport site of GRH is a slow-stream, general rehabilitation program. It provides low to moderate intensity rehabilitation for medically stable individuals who require a brief period of transitional care to restore and activate functional recovery. Patients of the Restorative Care Program are primarily older adults with various levels of cognitive impairment, stroke, fractures (predominantly hip), multiple co-morbidities, and frailty.

There are two separate units in the Restorative Care Unit, UT4 and GR3. UT4 was chosen as the pilot unit. As GR3 did not implement the program and patients were assigned to each unit based on bed availability, it was possible to conduct a direct comparison between patients receiving the HELP intervention (UT4) and patients on a control unit (GR3) receiving usual hospital care.

Also of significant interest was the acceptability (i.e., satisfaction) and feasibility (i.e., practicality) of the implementation of the HELP in post-acute rehabilitation hospital settings. To assess this, it was important to explore the perceptions of, and satisfaction with, the program from patient, caregiver, staff and volunteer perspectives.

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1.2 Research Objectives

This evaluation project was intended as a pilot feasibility study to examine potential successes and barriers to the implementation of the Hospital Elder Life Program (HELP) in a rehabilitation hospital setting. Information gathered from this study could provide data to be used to design a larger scale study. Specifically, this study sought to determine:

1. if changes in scores (pre-post treatment) on measures of functional and cognitive outcomes differ between individuals receiving the HELP (UT4 patients) and those not (GR3 patients);

2. patient, caregiver, volunteer, and staff perceptions of, and satisfaction with, the HELP.

CHAPTER TWO

Literature

2.1 Introduction

Both quantitative and qualitative research methods have contributed to the current understanding of the Hospital Elder Life Program (HELP) in over sixty hospital sites across several countries. In particular, the effectiveness of the HELP in acute care hospital settings has been well documented. There is however a lack of research on the acceptability and feasibility of the implementation of the HELP in other care settings, including rehabilitation hospitals. This project sought to address this current knowledge gap. This chapter provides a review of the existing literature on delirium, the prevalence and incidence of delirium in hospital settings, the diagnosis and management of delirium, and the HELP.

2.2 Delirium

According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V), delirium is a "common neuropsychiatric syndrome characterized by disturbance in attention and consciousness that develops over a short period of time and in which the symptoms tend to fluctuate during the course of the day" (American Psychiatric Association, 2013, p. 599). Disturbance in attention and awareness, altered consciousness, impaired cognitive function, perceptual abnormalities, external causation, and a fluctuating course with rapid onset have been identified as the core features of delirium (Milisen et al., 2001; Burns et al., 2004; Siddiqi et al., 2006; Blazer & van Nieuwenhuizen, 2012).

Additional features include impairment of memory, language and psychomotor behaviour; as well as illusions, delusions and hallucinations (Burns et al., 2004); and disturbance of the sleep-wake cycle (Meagher, 2001; Young & Inouye, 2007).

The pathophysiology of delirium is not yet well understood and it is plausible that there are numerous mechanisms involved in the development of delirium (Inouye, 2006). Three subtypes of delirium have been commonly identified in the literature: hypoactive, hyperactive, and mixed (Sandberg et al., 1999; Gleason, 2003). Hypoactive delirium is characterized by a decrease in physical activity, lack of speech (regardless of prompting), and unresponsiveness (Inouye et al., 2001). Patients with hyperactive delirium often show restlessness, irritability, and aggression (Sandberg et al., 1999; Ouldred & Bryant, 2011), and may experience delusions or hallucinations (Gleason, 2003). Mixed delirium involves fluctuations of features from both hypoactive and hyperactive forms of delirium (Sandberg et al., 1999; Gleason, 2003; Ouldred & Bryant, 2011). Some researchers have suggested that a fourth subtype exists, referred to as normal delirium in which no psychomotor disturbance is present (Yang et al., 2009; Ouldred & Bryant, 2011).

Most common among older adults in various care settings (Sandberg et al., 1999; Ouldred & Bryant, 2011), delirium is consistently associated with adverse outcomes including increased rates of morbidity, mortality, institutionalization, and longer, costlier hospitalizations (Rockwood, 1990; Inouye et al., 1993; Sandberg et al., 1999; Inouye et al., 1999; McAvay et al., 2006; Siddiqi et al., 2006; Young & Inouye, 2007; Tabet & Howard, 2009). In 2010, the National Institute for Health and Clinical Excellence (NICE) issued a systematic review that suggested further consequences of delirium including a higher risk of dementia, as well as other complications such as falls, pressure

ulcers, infections or functional impairment (National Institute for Health and Clinical Excellence, 2010; Ouldred & Bryant, 2011). Delirium is therefore an increasingly critical concern for the health care systems of countries, particularly in those with aging populations (Inouye et al., 1999; Young & Inouye, 2007).

2.2.1 Prevalence and Incidence in Hospital Settings

Delirium in older patients is typically "multifactorial in origin, including baseline patient characteristics present at admission and acute precipitating stressors that develop in the hospital" (Rubin et al., 2006, p. 969). The various psychological and physiological stressors associated with hospitalization often stimulate or aggravate the development of delirium in older adults (McCusker et al., 2001; Young & Inouye, 2007). It has been well documented that the use of multiple medications, urinary catheters, and restraints (Heckman et al., 2007), as well as involuntary confinement to bed may trigger the onset and development of delirium (Gillick et al., 1982; Milisen et al., 2001).

Patients with delirium are more likely to experience adverse outcomes during and after hospitalization (Inouye et al., 1998; McCusker et al., 2002; Marcantonio et al., 2003; McAvay et al., 2006). A prospective comparison study of medical patients in an acute care hospital found that those with delirium reported a twofold increase in discharge mortality, an average increase of eight days in the length of hospital stay, and poorer physical and cognitive functional recovery at six and twelve months with more time spent in institutional care (McCusker et al., 2003).

For decades, delirium has been recognized as the most common complication for hospitalized older adults (Gillick et al., 1982; Rubin et al., 2006). Although it has been shown to be common in most hospital settings (Francis & Kapoor, 1990; van der Mast & Roest, 1996; Bucht et al., 1999; Inouye, 1999; Siddiqi et al., 2006), the vast majority of the research has focused on delirium in acute care (Ouldred & Bryant, 2011); particularly in medical, surgical, and geriatric units (Caplan & Harper, 2007). The condition may be present upon admission, or develop during the hospital stay (Ouldred & Bryant, 2011).

Both prevalence and incidence rates tend to vary greatly in the literature due to discrepancies in diagnostic criteria and study populations (Rummans et al., 1995). Research on the prevalence of delirium in acute care settings in North America has yielded widely variable results, showing rates that range anywhere from 12%-56% (Johnson et al., 1990; Schor et al., 1992; Cole et al., 2002; Inouye, 2004). A study conducted by McAiney and colleagues (2012) found a point-prevalence rate of 10.6% in non-critical acute hospital units, with the highest rates of delirium among medical units. These findings suggest that about 10%, or more, of patients in non-critical acute care settings experience delirium on any particular day (McAiney et al., 2012).

It is rather common for older adults to develop delirium during their hospital stay. Incident cases of delirium are believed to occur in 25% to 56% of hospitalized patients (Inouye, 1998; Inouye, 2004; McAvay et al., 2006), varying considerably. Rates of delirium incidence in acute care hospitals are particularly high among older adults postoperatively, especially following vascular and hip fracture surgeries (Young & Inouye, 2007);

with approximately 25% to 61.3% of geriatric hip fracture patients developing delirium (Marcantonio et al., 2000; Milisen et al., 2001; Lundstrom et al., 2005).

Among hospitalized older adults, delirium can persist for weeks and even several months (Ouldred & Bryant, 2011). It is now generally acknowledged that care transitions, hospital discharge in particular, are critical periods for vulnerable older patients (Coleman et al., 2004; Glenny et al., 2013); and several studies show a worse prognosis for those discharged with delirium (Marcantonio et al., 2000; McCusker et al., 2003; Kakuma et al., 2003; McAvay et al., 2006). As hospital stays have continued to shorten and it has become more evident that symptoms may persist for weeks or months (Inouye et al., 1999; McAvay et al., 2006), "concern about delirium can no longer be confined to acute care" (Marcantonio et al., 2003, p. 4).

2.2.1.2 Post-Acute Care

For many older adults, delirium is not resolved while in the hospital (Marcantonio et al., 2000; McCusker et al., 2003; McAvay et al., 2006). Consequently, older patients with delirium may have a greater likelihood of being discharged to post-acute facilities (Marcantonio et al., 1994; Inouye et al., 1998; Marcantonio et al., 2003). These findings suggest that symptoms of delirium are not considered a reason to remain in the hospital (Marcantonio et al., 2003). Rather, older patients who experience persistent delirium are being discharged earlier (Inouye et al., 1999; McAvay et al., 2006). Early discharge of patients with persistent delirium may result in an increased caregiver burden for family members (Johnson & Fethke, 1985; Wolock et al., 1987), higher rates of unplanned readmission (Ashton et al., 1995), and more of a need for planning and coordination of post-acute and community services (Mamon et al., 1992; Inouye et al., 1999).

Marcantonio and colleagues (2003) examined a sample of 551 patients from 85 post-acute facilities including long-term care homes and rehabilitation hospitals. The results showed that prevalence rates of delirium at post-acute admission were comparable to incidence rates in the acute care hospitals, and persisted during the hospital stay. Sixty-four percent of patients with delirium symptoms on admission displayed the same number or more at reassessment one week later, and had worse functional recovery. Four percent of patients with no symptoms at admission developed new symptoms one week later, indicating some delirium incidence. Only 14% of participants resolved their symptoms completely; and those patients with improved symptoms presented functional improvement similar to those who exhibited no delirium symptoms on either assessment (Marcantonio et al., 2003).

Although it has been made evident that delirium is prevalent in post-acute facilities (Marcantonio et al., 2003; McAvay et al., 2006; Jones et al., 2010), research is sparse; especially regarding delirium prevalence in rehabilitation hospital settings. Many questions remain unanswered within the literature. It is uncertain whether the post-acute care environment effects the development or persistence of delirium; as well as whether delirium symptoms could be managed to resolve efficiently in post-acute settings, and if such management will ultimately improve functional recovery (Marcantonio et al., 2003). According to Siddiqi and colleagues (2006), the "necessary first step to devising appropriate strategies to prevent and manage delirium is to determine its occurrence and outcomes in a particular setting" (p. 351). Thus, more research on delirium in post-acute care settings is essential to reduce the rates of delirium and potentially enhance functional recovery.

2.2.2 Diagnosis and Management

Delirium is frequently unrecognised by medical and nursing staff, and is often poorly managed (Inouye et al., 2000). Yet, if it is detected early, delirium can be managed and treated effectively (Inouye et al., 1999; Ouldred & Bryant, 2011). Clinical guidance on the prevention, diagnosis, and management of delirium has been provided by the National Institute for Health and Clinical Excellence (NICE) in 2010, emphasizing the need to identify individuals at high risk of developing delirium and offering tailored interventions to prevent the development of delirium. Moreover, the guideline advocates for more high-quality research and the provision of better information for patients and caregivers. Adherence to these recommendations will likely improve quality of care, as well as generate cost savings through proper management of delirium (NICE, 2010; Ouldred & Bryant, 2011).

2.2.2.1 Prevention

It is now widely accepted that delirium is a potentially preventable condition (Inouye et al., 1999; Jones et al., 2010; Ouldred & Bryant, 2011; Siddiqi et al., 2011). Much of the literature suggests that at a minimum, one third of delirium cases could be prevented (Inouye et al., 1999; Royal College of Psychiatrists, 2005; Young & Inouye, 2007). Studies led by Inouye and colleagues (1996 and 1999) have suggested that a decrease of 25% is attainable with simple measures of prevention, such as minimal psychoactive medication use, management of dehydration, and early mobilization, along with significant cost savings. In consideration of these findings, the development of interventions to prevent and improve management of delirium should be a priority for health care services.

There is no existing evidence that pharmacological interventions are able to prevent the development of delirium, while a number of studies have demonstrated that several non-pharmacological interventions are effective (Tabet & Howard, 2009). Most research on delirium prevention that contributes to informing clinical practice is based on non-randomized experimental studies. These studies (Inouye et al., 1999; Inouye et al., 2000; Rizzo et al., 2001; Rubin et al., 2006) and one randomized control trial (Marcantonio et al., 2001) "collectively indicate that the most successful approach to delirium prevention is to attenuate modifiable risk factors in individual patients" (Young & Inouye, 2007, p. 845).

Evidence has consistently shown that delirium can be prevented in hospitals by using a multicomponent intervention that directly targets its risk factors (Inouye et al., 1999; Marcantonio et al., 2001; Tabet & Howard, 2009; Siddiqi et al., 2011). Identified risk factors of delirium can be categorized into two types: predisposing and precipitating (Inouye & Charpentier, 1996; Inouye, 1999; Meagher, 2001; Heckman et al., 2007). Predisposing risk factors (i.e., patient vulnerability) include advanced age, pre-existing cognitive impairment (e.g., dementia), immobility, social isolation, alcohol or illegal drug use, certain medications (e.g., psychoactive), comorbidity (Meagher, 2001), illness severity, dehydration, visual or hearing impairment (Heckman et al., 2007), male gender, depression, diminished physical functioning (Elie et al., 1998), and sleep deprivation (Inouye, 2006). Precipitating factors (i.e., hospital-related stressors) include use of physical restraints, bladder catheter, malnutrition, more than three medications added, and any iatrogenic event (Inouye & Charpentier, 1996). The risk of delirium is greater as the number of existing risk factors is increased (Inouye et al., 1999).

Measures to prevent delirium should address both the predisposing and precipitating risk factors. The opportunity to mediate and ameliorate other risk factors, such as those precipitants that are associated with hospitalization, may otherwise be overlooked. To prevent the development of delirium and other adverse clinical outcomes, Ouldred and Bryant (2011) suggest that "the identification of individuals at risk of delirium, early responsiveness to potential precipitants, and implementation of tailored strategies" are essential strategies (p. 50). Primary prevention of delirium is considered the most effective strategy to reduce the incidence of delirium and other common geriatric syndromes such as functional decline, pressure ulcers, falls, and incontinence (Inouye et al., 1999; Milisen et al., 2001). Interventions that aim to prevent or improve these syndromes should be multifactorial and incorporate "comprehensive assessment, targeted treatment, and environmental modifications to promote safety and independence" (Landefeld, 2006, p. 43).

2.2.2.2 Diagnosis

Current criteria for delirium diagnosis are published in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), as well as in the tenth edition of the International Classification of Diseases (ICD-10). The diagnostic criteria in the DSM-V include:

a) "disturbance in attention (i.e., decreased ability to direct, focus, sustain, and shift attention) and awareness (i.e., reduced orientation to the environment);

b) the disturbance develops over a short period of time (hours to days), represents a change from baseline, and tends to fluctuate throughout the course of the day;

c) an additional disturbance in cognition (e.g., memory, disorientation, language, visuospatial ability, or perception);

d) the disturbances in criteria A and C are not better explained by another pre-existing, established, or evolving neurocognitive disorder and do not occur in the context of a severely reduced level of arousal, such as coma;

e) there is evidence from the history, physical examination, or laboratory findings that the disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal, or exposure to a toxin, or is due to multiple etiology" (American Psychiatric Association, 2013, p.596).

While the DSM-V focuses largely on rapid changes in consciousness and cognition, the ICD-10 expands its diagnostic criteria to encompass further identified symptoms of delirium (Burns, 2004). The ICD-10 diagnostic criteria include:

a) "impairment of consciousness and attention (ranging from confusion to coma);

b) global disturbance of cognition (perceptual distortions, illusions and hallucinations-most often visual; impaired abstract thinking and comprehension, with or without transient delusions, typically with some degree of incoherence; impairment of immediate recall and recent memory, but relatively intact remote memory);

c) psychomotor disturbances (hypo-or hyperactivity and unpredictable shifts from one to the other; increased reaction time; increased or decreased speech flow; enhanced startle reaction);

d) disturbance of the sleep/wake cycle (insomnia, total sleep loss or reversal of the sleep/wake cycle; daytime drowsiness; nocturnal worsening of symptoms; disturbing dreams or nightmares that may persist after awakening);

e) emotional disturbances (e.g., depression, anxiety or fear, irritability, euphoria, apathy or wandering, perplexity)" (World Health Organisation, 1992, p. 53-54).

Rummans and colleagues (1995) stated that "as with any illness, the diagnosis of delirium depends on its recognition" (p. 990). Yet, delirium is frequently under-recognized and misdiagnosed, especially among older adults (Inouye, 1994; Rockwood et al., 1994; Pompei et al., 1995); partially due to its fluctuations, the overlap of symptoms with other conditions (e.g., dementia), lack of cognitive assessment, and failure to consider the diagnosis and its consequences as significant (Inouye, 2006; Ouldred & Bryant, 2011). Years of evidence suggest that the syndrome is unrecognized by medical and nursing staff in 33-66% of affected patients (Knights & Folstein, 1977; Levkoff et al., 1988; Rummans et al., 1995; Meagher, 2001). Therefore, delirium often leads to diagnostic, therapeutic, and other difficulties in providing care (Sandberg et al., 1999). Since delirium may affect the overall prognosis of patients, proper approaches to its detection, evaluation, and intervention are necessary. Methods used to detect and diagnose delirium include assessments of mental status, symptom rating scales, clinical interviews, and electroencephalography (Rummans et al., 1995).

Some brief tests of mental status are considered useful in identifying patients with delirium. The Mini-Mental State Examination (MMSE) was established by Folstein and colleagues (1975) as a practical assessment of cognitive impairment. Items consist of questions regarding orientation, registration, language, recall, and attention or concentration; and scores less than 24 are deemed atypical (Folstein et al., 1975). Nevertheless, the MMSE cannot reliably distinguish between dementia and delirium (Anthony et al., 1982), fails to distinguish between acute and chronic impairment, and does not establish the diagnosis of delirium (Levkoff et al., 1991).

The Montreal Cognitive Assessment (MoCA) was subsequently developed as a brief cognitive screening tool. The screening tool has revealed high sensitivity (90%) and specificity (87%); as well as test-retest reliability, internal consistency, and content validity with a good correlation between MoCA and MMSE scores (Nasreddine et al., 2005). The MoCA is able to identify cognitive impairment and is particularly useful in detecting mild cognitive impairment (MCI). However, the MoCA focuses primarily on the diagnosis of dementia (Nasreddine et al., 2005). There remains a need for an assessment that is able to identify delirium specifically.

The Delirium Rating Scale (Trzepacz et al., 1988) is a 10-item assessment that rates patients on characteristic delirium symptoms including temporal onset, perceptual disruptions, mood, behaviour, sleep, cognition, and illness severity. A study conducted by Rockwood and colleagues (1996) showed that the scale could validly detect delirium, distinguish between dementia and delirium, assess several clinical features, and be feasible in certain instances. However, the measure lacks specific operationalization (Rockwood et al., 1996) and a standardized format (Rummans et al., 1995). Around the same time, the Confusion Rating Scale (Williams et al., 1988) was developed as a short and practical nursing assessment of confused behaviour. This scale rates four features of confused behaviour: disorientation, inappropriate behaviour, inappropriate speech, and illusions or hallucinations. The Confusion Rating Scale is also limited in its usefulness to detect delirium as it fails to address attention, obscured consciousness, or cognition (Rummans et al., 1995).

The Confusion Assessment Method (CAM) was also developed in 1988 by Dr. Sharon Inouye to improve the identification and recognition of delirium (Inouye et al., 1990). Key diagnostic elements of delirium were identified through literature review and expert consensus, and incorporated into a simple algorithm to enhance its precision (Rockwood et al., 1994; Wei et al., 2008). The purpose of the CAM is to allow clinicians who are not trained in psychiatry to identify delirium accurately in five minutes or less with a sensitivity range of 91-100% and a specificity of 85-95% (Inouye et al., 1990; Wei et al., 2008). It can be administered and scored in clinical care settings within minutes following a patient interview; thus it represents minimal burden on hospital staff (Inouye et al., 1990). The CAM has now become the most commonly used instrument to detect delirium worldwide (Wei et al., 2008).

2.2.2.3 Management

Along with the diagnosis of delirium, evidence of effective management of the condition is also inadequate (Cole, 2004; Siddiqi et al., 2006). Diagnosis and treatment of delirium tend to occur simultaneously, and the consistent evaluation of progress is critical (Meagher, 2001). As delirium is considered an emergency (Burns et al., 2004), it is recommended that the condition is best managed in a hospital setting because persistent investigation and treatment can be provided. Conversely, the advantages of being in the hospital may be contradicted by the potentially harmful effects associated with hospitalization on older patients or those who may experience cognitive impairment due to a sudden change in environment (Meagher, 2001). Early attention to identifiable risk factors, predisposing or precipitating, should thus be an initial aim of management (Rummans et al., 1995; Meagher, 2001; Burns et al., 2004).

According to Marcantonio (2002), there are four key steps in the management of delirium: 1) identify and treat underlying causes; 2) support the control of behaviours; 3) prevent further impairment; and 4) assist with functional needs. Non-pharmacological measures, including maximizing environmental safety and offering psychosocial support, have been proven to be the most effective in fulfilling these steps to manage delirium. Environmental modifications involve enhancing patients' ability to properly interpret the surroundings and providing constant reassurance, orientation, observation, and comfort (Rummans et al., 1995). Moreover, medical and nursing staff should promote proper nutrition, regular sleep/wake cycles and physical activity to avoid the negative effects of immobility and deconditioning (Rummans et al., 1995; Meagher, 2001). Psychosocial supports may be provided by both staff or family and friends. The continuity of staff as well as the provision of care and observation from family and friends may offer patients reassurance, support, orientation, and lessen agitation and anxiety (Rummans et al., 1995).

Schofield (1997) conducted a small exploratory study to examine the reaction of older adults to an episode of delirium. The investigator found that patients who have recovered from delirium stated that simple and straightforward communication, orientation of reality, a clock, and having a relative present all contributed to a stronger feeling of control during incidents of delirium (Schofield, 1997). Environmental modifications and psychosocial supports that have been previously acknowledged represent features of an adequate care environment in addition to reducing delirium rates, and should be implemented habitually in all patient care settings. Further efforts made in direct response to symptoms of delirium (e.g., reorienting patients) should be detailed in treatment plans (Meagher, 2001).

Evidence suggests that nursing staff "trained in managing patients with delirium improve outcomes by limiting risk factors, increasing recognition of the syndrome, and encouraging standardized treatment" (Meagher, 2001, p. 146). As a result of such findings, several interventions have since been introduced to prevent and manage delirium in hospital settings.

Numerous studies have attempted to demonstrate effectiveness of delirium interventions in various settings but have suffered from a lack of statistical power, non-blinded procedures, or appropriate outcome measures (Burns et al., 2004). Early studies have typically focused on four types of intervention: "1) geriatric approaches; 2) nursing care; 3) family-oriented interventions; and 4) anesthesia" (Inouye et al., 1999, p. 669). Delirium interventions that involve single measures have not been shown to be effective. For instance, those that only implement staff education (Rockwood, 1999) or consultations did not have a significant effect on reducing the incidence of delirium, particularly if they failed to involve all staff members and some aspects of care for patients (Cole et al., 1994; Cole, 1999; Cole et al., 2002; Lundstrom et al., 2005). Although interventions that are based primarily on the education of medical and nursing staff have been shown to increase recognition of the condition (Rockwood et al., 1994), and knowledge of the risk factors is believed to be the most important information to have (Burns et al., 2004), the multifactorial nature of delirium necessitates the implementation of a broad intervention strategy (Burns et al., 2004; Siddiqi et al., 2011).

One interventional study by Lundstrom and colleagues (2005) examined the effectiveness of a multifaceted intervention program including education, guidance, and a reform in the provision of care. The intervention involved all of the staff who worked on the pilot general internal medicine unit, including physicians. Staff education focused on the assessment, prevention, and treatment of delirium, as well as on caregiver-patient interaction. The provision of care was changed from a task-allocation system to a patient-allocation system which emphasized individualized care. Results of the study showed a reduction in the duration of delirium, shorter length of the hospital stay, and a reduction in mortality rate during hospitalization for patients with delirium. These findings may be attributable to the reorganization of care, which enhanced the requirements for continuity and interaction with patients, and raised awareness of both predisposing and precipitating risk factors for delirium by all staff members (Lundstrom et al., 2005).

Another study by Milisen and colleagues (2001) developed and tested a nurse-led interdisciplinary intervention program that focused on the early recognition and treatment of delirium in older hip-fracture patients. The intervention included four components: 1) the education of nursing staff; 2) systematic cognitive screening; 3) use of a scheduled pain protocol; 4) and consultation services by a delirium resource nurse, a geriatric nurse specialist, or a geriatric psychiatrist. In comparison to the control group, older hip-fracture patients in the intervention group displayed less severe delirium, a shorter duration of delirium, and fewer memory deficits. The reduced severity of delirium and shorter duration of symptoms may indicate that the quality of nursing care had improved as a result of the intervention.

However, delirium did delay functional recovery considerably, for both the intervention and control groups. Furthermore, an earlier multicomponent intervention study conducted by Inouye et al. (1999) showed a more significant decrease in the incidence of delirium (i.e., prevention) than this study (Milisen et al., 2001).

2.3 The Hospital Elder Life Program (HELP)

Dr. Sharon Inouye and colleagues (1999) developed an innovative model of care originally titled the Yale Delirium Prevention Program, which was later translated into routine practice as the Hospital Elder Life Program (HELP). The HELP is a multicomponent intervention that aims to prevent delirium and functional decline in hospitalized older adults by reducing the number of risk factors (Inouye et al., 1999). In particular, six risk factors for delirium: cognitive impairment, sleep deprivation, immobility, vision impairment, hearing impairment, and dehydration (Inouye et al., 1993; Inouye & Charpentier, 1996; Elie et al., 1998) are targeted by the program interventions. The risk factors were selected based on existing evidence of their association with delirium and because they are adaptable to intervention strategies that are feasible in the context of routine hospital care (Inouye et al., 1999).

The HELP interventions include: 1) an orientation protocol that targets cognitive impairment; 2) a sleep protocol to promote sleep enhancement; 3) early mobilization and minimum restraints to prevent deconditioning; 4) adaptive equipment and aids for vision optimization; 5) wax removal and aids for the hearing impaired; and 6) attention to nutrition and hydration (Inouye et al., 2000; Young & Inouye, 2007).

Geriatric nursing assessment and interventions, geriatric consultation, interdisciplinary rounds, provider education (Rubin et al., 2006), and connections with community services and follow-up care are also common features of the HELP (Heckman et al., 2011). These practical interventions were designed to be integrated into regular care processes (Milisen et al., 2001); and to be executed by a skilled interdisciplinary staff including a geriatric nurse specialist, specially trained Elder Life Specialists (ELS), and trained volunteers (Inouye et al., 2000; Bogardus et al., 2003; Inouye et al., 2006; Sandhous et al., 2010).

Intensive training of the volunteers involves sixteen hours of small group training followed by an approximate sixteen hours of one-on-one training paired with a staff member or an experienced volunteer on the hospital units (Rubin et al., 2006). Implementation of the program does not require a separate, specialized geriatric unit; but rather, the HELP is intended to be integrated within existing hospital units (Inouye et al., 2006; Heckman et al., 2011). Upon admission, HELP staff screen eligible patients (i.e., aged ≥ 70 years) for the six risk factors using a simple algorithm to identify those at risk of delirium and who might benefit from the HELP (Inouye et al., 2000; Heckman et al., 2011). The inclusion criteria are intended to assure that patients will benefit from the program by presenting with at least one of the targeted risk factors for cognitive and functional decline during hospitalization. Interventions are then individualized for each patient based on the delirium risk factors present at the screening assessment and reassessments. The inability to participate in the intervention protocols is the primary reason for program exclusion (Rubin et al., 2006).

Though the core interventions focus on delirium, the program was hypothesized to be a comprehensive model of care for hospitalized older adults. By targeting amendable, evidence-based risk factors using interventions designed to be practical and generalizable, the HELP aims to meet the needs of the hospitalized older population, a frail group at a high risk for complications (Inouye et al., 2000). Frail individuals are defined by Rockwood and Mitnitski (2011) as those with a high accumulation of deficits (i.e., symptoms, illnesses, disabilities) that increases the risk of negative health outcomes. The goals of the HELP address some limitations of previous models of geriatric care (Inouye et al., 2000), and represent several critical components of an integrated system aiming to keep the frail older population healthy and active in the community (Heckman et al., 2011). Goals of the program are: "1) to maintain physical and cognitive functioning throughout the hospital stay; 2) to maximize independence at discharge; 3) to assist with the transition from hospital to home; 4) to prevent unplanned readmission" (Inouye et al., 2000, p. 1698).

A number of studies have shown that the HELP is effective in preventing delirium, as well as other common geriatric complications (Inouye et al., 1999; Inouye et al., 2000; Bogardus et al., 2003; Inouye et al., 2006; Rubin et al., 2006; Rubin et al., 2011; Mouchoux et al., 2011). First, a controlled clinical trial was conducted by Inouye and colleagues (1999) to examine the effectiveness of HELP in its evolving stages. The CAM was used to identify incidences of delirium, and a prospective individual matching strategy was implemented to compare the intervention group with a control group that received usual care. Compared to the control group, patients in the intervention group demonstrated a reduced risk of delirium, a lower incidence of delirium, and a fewer number of days with delirium.

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The results were most prominent among patients who were at intermediate risk of delirium at admission (i.e., baseline). Furthermore, the HELP had no significant effect on the severity of delirium or the probability of reoccurrence once delirium had developed. These findings suggest that it is primary prevention that is the most effective strategy to address delirium in hospital settings (Inouye et al., 1999).

A case study conducted by Inouye and colleagues (2006) examined the implementation of the HELP in thirteen acute care hospitals, and demonstrated several local adaptations and successes. The results showed that the HELP plays a role in 1) providing a geriatrics education/training/resources site; 2) improving hospital outcomes for older adults; 3) offering nursing education and improving job satisfaction and retention; 4) enhancing patient and family satisfaction with hospital care; 5) raising visibility for geriatrics; 6) enhancing quality of care; 7) providing cost-effective care; 8) improving public relations and community outreach for hospitals; 9) contributing to awards or commendations for hospitals; 10) distinguishing volunteer services; and 11) providing research opportunities (Inouye et al., 2006).

Previous studies have identified common challenges met during the initial adoption of the HELP, including acquiring internal support, ensuring effective clinical leadership, integrating with existing geriatric programs, upholding program reliability, demonstrating positive outcomes, and maintaining momentum despite impractical timelines and limited resources (Bradley, 2004). Clinical leadership, adapting to local circumstances, and obtaining long-term funding (Bradley et al., 2005) are also essential. Along with the advantages and successes, these findings have important implications as findings that are based on site-specific data can be

influential and meaningful to hospital administration and are advantageous to help validate and sustain the HELP in various settings (Inouye et al., 2006).

The HELP has now been disseminated to more than sixty hospitals in the United States, Canada, United Kingdom, Taiwan, and Australia (Rubin et al., 2011). A study by Caplan and Harper (2007) examined the implementation of four interventions, excluding the sleep and mobility protocols, adapted by the HELP in an Australian hospital setting. The authors found that despite the modifications, the program was effective in preventing delirium as well as cognitive and functional decline. Moreover, patients who received the intervention had more positive clinical outcomes than the control group, including a reduction of falls and placement in long-term care or hostel care (Caplan & Harper, 2007). The HELP may thus be applicable and effective in several different countries, even when it is only partially implemented.

An innovative study conducted by Siddiqi and colleagues (2011) designed and examined the feasibility of 'Stop Delirium!', a variation of the HELP to prevent delirium in long-term care facilities. Using a mixed methods approach, the researchers found that a multicomponent intervention to prevent delirium was indeed feasible in long-term care settings. Results of the study showed that the program had the potential to improve staff attitudes and practice toward delirium care, as well as to reduce hospital admissions and enhance quality of care for all residents. The effectiveness of 'Stop Delirium!' could not be established as the program had only been implemented for less than a year (Siddiqi et al., 2011). Nonetheless, these findings suggest that the HELP interventions may be advantageous to not only acute care hospitals, but also in various other care settings.

CHAPTER THREE

Study Design and Methods

3.1 Introduction

Mixed methods research is defined as the class of research where the investigator "mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or languages into a single study" (Johnson & Onwuegbuzie, 2004, p. 17). Employing a mixed methods design is advantageous as it allows researchers to verify findings from different data sources to best answer the specific research questions. Onwuegbuzie and Leech (2004) suggest that mixed methods designs also enhance the investigator's understanding of the subject (Onwuegbuzie & Leech, 2004; Johnson & Onwuegbuzie, 2004). The advantages are now widely recognized, which has resulted in a rapid growth in the interest in mixed methods research (Creswell, 2003).

For more than three decades, mixed methods designs have been applied to evaluations (Tashakkori & Teddlie, 2003). Evaluation was defined by Weiss (1998) as "the systematic assessment of the operation and/or the outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy" (p. 4). As evaluation is a learning process in which one stage informs another in a non-linear manner, methods are quite naturally mixed. Most evaluations pose various questions and thus, evaluators typically choose from multiple designs and methods when conducting a study (Tashakkori & Teddlie, 2003).

A mixed methods approach for this pilot feasibility study was therefore appropriate to examine the potential successes and barriers to implementing the HELP in a post-acute rehabilitation hospital setting by addressing the following research objectives:

1. to determine if changes in scores (pre-post treatment) on measures of functional and cognitive outcomes differ between individuals receiving the HELP (UT4 patients) and those not (GR3 patients);

2. to explore patient, caregiver, volunteer, and staff perceptions of, and satisfaction with, the HELP.

A similar version of this study was reviewed by the Tri-Hospitals Research Ethics Board (THREB) and received ethics clearance. This study was also reviewed by and received ethics clearance through the University Of Waterloo Office Of Research Ethics (ORE# 19900) prior to recruitment and primary data collection.

This chapter describes the use of a mixed methods approach including a quasi-experimental untreated control group design with pretest and post-test (Cook & Campbell, 1979) using secondary data analysis of patient outcome measures and caregiver self-report questionnaires being collected by Grand River Hospital (GRH), as well as primary data collection using focus group and individual interviews. These methods, both quantitative and qualitative, were considered equal and throughout the evaluation project (Steckler et al., 1992; Tashakkori & Teddlie, 2003). The research setting, study population, and procedures for recruitment, data collection, and data analyses are also included in this chapter. A flow chart of the study procedures that were followed is provided below (Figure 1).

Patient Admitted to Restorative Care (UT4 and GR3)
↓
Patient Screened by Resource Nurse for study eligibility
(Aged 70yrs+, estimated LOS 14 days+, ability to read and comprehend English)
↓
Medical Record Number (MRN) of Eligible Patients forwarded to Project Leads
↓
Eligible patients approached to participate by Project Leads
↓
Pre-measures (collected by staff on admission) (N = 100)
FIM (Keith et al., 1987)

MoCA (Nasreddine et al., 2005)
- Short-term Memory and Recall
CAM (Inouye et al., 1990)
Charlson Co-Morbidity Index (CCI) (Charlson et al., 1994)

Patient Characteristics (e.g., age, gender)

Caregiver questionnaire
↓
100 patients assigned to UT4 intervention unit (58) or to GR3 control unit (42)
↓
Post-measures (collected by staff at discharge) (N= 100)
FIM (Keith et al., 1987)
- FIM Rehabilitation Efficiency

MoCA (Nasreddine et al., 2005)
- Short-term Memory and Recall
CAM (Inouye et al., 1990)
Type and Duration of therapy

Length of Stay (LOS)

Number of falls

Discharge Location
↓
Quantitative Data Analysis
Secondary data analysis of pre-and-post measures of 58 patients on the intervention unit (UT4) and 42 patients on the
control unit (GR3)
↓
Qualitative Data Collection

3 focus group interviews (Nursing and therapy staff, HELP volunteers, HELP patients and their caregivers)
3 individual interviews with HELP patients and their caregivers
4 individual interviews with administrative staff members involved with the HELP
↓
Qualitative Data Analysis
Qualitative analysis of focus group interview data
Qualitative analysis of individual interview data
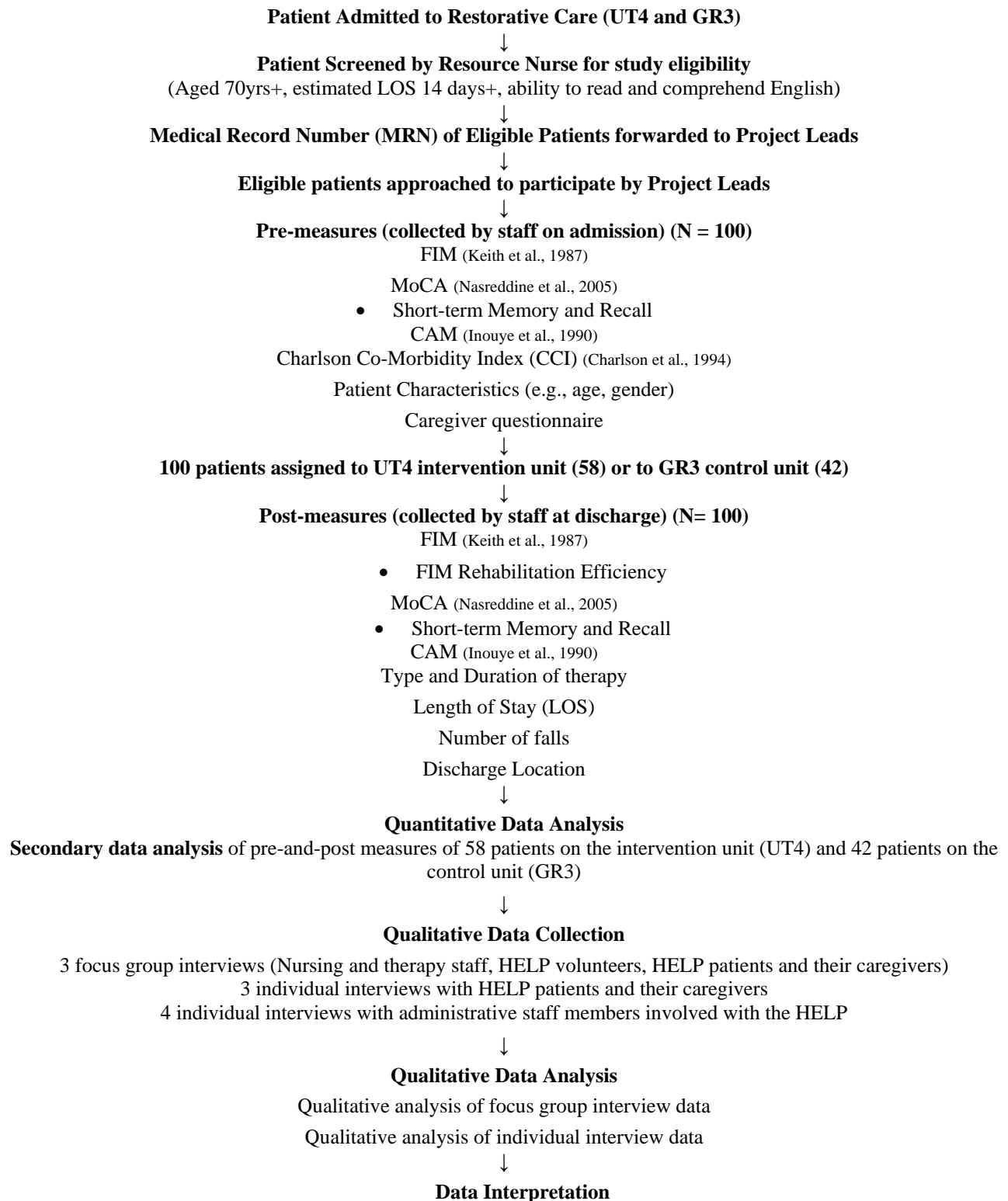↓
Data Interpretation

Figure 1: Flow Chart of Procedures

3.2 Setting

The study took place within the Restorative Care Program, an in-patient rehabilitation program, located in the Complex Continuing Care service at the Freeport site of Grand River Hospital (GRH). The Restorative Care Program provides a low to moderate intensity rehabilitation program for medically stable individuals who require a short period of transitional care to restore and activate functional recovery. Admission criteria to the Restorative Care Program include:

- Minimum age of 18 years
- Medical stability (no acute medical issues)
- Willingness and motivation to participate in the program
- Established functional or clinical goals that are specific, measurable, realistic, and timely
- Demonstrated potential to tolerate being up in a chair 2-3 times per day
- Demonstrated potential to attain the identified functional goals and the ability to participate and integrate new learning and skills into daily life
- Demonstrates sufficient cognitive ability to participate in goal setting and carry over new learning into their activities of daily living (e.g., patient scores more than 15/30 on a MoCA)
- Treatment of co-morbid illnesses/conditions does not interfere with the ability to actively participate in the program on a daily basis (e.g., radiation therapy)

Currently, patients of the Restorative Care program are primarily older adults with various levels of cognitive impairment, stroke, fractures (predominantly hip), multiple co-morbidities and frailty who are unable to return home following assessment at discharge in acute care. The length of stay is goal dependent with a maximum of ninety days to improve strength, endurance, or functioning in order to return the individual to the community. Care plans are individualized and are adjustable according to the individual's tolerance level. Occupational and physical therapy is limited to approximately fifteen minutes of therapy three days per week.

The Restorative Care Program is a therapeutic setting that includes nursing rehabilitation, a community dining room, and opportunities for socialization. There are fifty-nine beds within the Restorative Care Program situated on two separate units, UT4 with 32 beds and GR3 with 27 beds, respectively. UT4 was chosen as the pilot unit. As GR3 did not receive the HELP, and patients are assigned to each unit based on bed availability, a direct comparison between patients receiving the HELP intervention (UT4) and patients on a control unit (GR3) receiving usual care was conducted.

The HELP was modified to be implemented in a rehabilitation setting. Two HELP interventions, rather than the standard three, were scheduled per day because patients were often busy or tired from rehabilitation therapy. The sleep protocol was limited to the provision of a warm blanket due to unavailability of HELP volunteers at the time patients' go to sleep. Implementation of the early mobility protocol was limited due to the restrictive weight bearing status of most patients, and leg extensions were added to the range of motion activities so that they could be performed while sitting in a wheelchair. Assistance at meals was also limited to set up and encouragement as patients could self-feed and dined communally.

3.3 Study Population

3.3.1 Patients

Patients in the Restorative Care Program at Freeport who satisfied the eligibility criteria of the HELP were the target sample of patients in this study. Participating patients were 70 years of age or older with an expected length of stay of 14 days at a minimum to allow a sufficient number of interventions to demonstrate change. Patients were required to be able to read and comprehend

English to communicate and provide information when necessary (e.g., focus group interviews).

As the primary outcome of this quasi-experimental untreated control group design with pretest and post-test (Cook & Campbell, 1979) was delirium, the sample size was calculated based on the original study by Inouye and colleagues (1999) that examined the effectiveness of the HELP in an acute care hospital. The investigators found that the incidence of delirium in the intervention group was 9.9% compared to 15% in the control group (Inouye et al., 1999). Using these proportions as estimates and with alpha= 0.05 (95% confidence) and beta = 0.2 (80% power), a sample size of 686 per group was required (Taylor, 1983). A sample size of this magnitude was not feasible for this study.

Another primary outcome of this study was functional recovery. This was measured using the Functional Independence Measure (FIM) (Keith et al., 1987). To demonstrate an estimated clinically important difference of six points in FIM scores between groups (intervention and control) with an estimated standard deviation of 10, and again with alpha= 0.05 and beta= 0.2, a sample size of 47 per group was needed (Taylor, 1983).

3.3.2 Caregivers

Caregivers of patients in the Restorative Care Program who have participated in the HELP were asked to participate in multiple components of this study. Caregivers were asked to participate in a self-reported questionnaire, as well as a focus group interview, and thus it was required that they be able to read, write, and comprehend English. Caregivers were only excluded from this study if they were unable to read, write, and/or comprehend English.

3.3.3 Volunteers

HELP volunteers who were situated on the pilot Restorative Care Unit (UT4) or were involved with the HELP for at least one month were asked to participate in a focus group interview. Volunteers were only excluded from the study if they had not volunteered on the pilot unit (UT4) or been involved with the HELP for one month at a minimum, as they may not have been able to provide sufficient information on their experience with the program.

3.3.4 Staff

Staff members who worked on the pilot Restorative Care Unit (UT4) or were involved with the HELP for at least one month were eligible to participate in a focus group interview. Other staff members who were involved with the administration of the HELP were asked to participate in a brief one-to-one interview. Staff members were only excluded if they had not worked on the pilot Restorative Care Unit (UT4) or been involved with the HELP for at least one month, as they may not have been able to provide adequate information on their experience with the program.

3.4 Recruitment

3.4.1 Quantitative Data

3.4.1.1 Patients

A non-probability consecutive sampling strategy was used. Consecutive sampling is used when it is possible to recruit every available subject that meets the inclusion criteria "over a time period that is long enough to avoid seasonal factors or other changes over time" (Gibson, 2005, p.

10). Recruitment of patients took place on the two Restorative Care units (UT4 and GR3) from September 2013 until June, 2014. All admitted patients were screened by the Resource Nurse on each unit to identify those who met the inclusion criteria (aged 70 years or older, estimated length of stay greater than 14 days and able to read, and comprehend English). Subsequently, the Resource Nurse e-mailed the Medical Record Number (MRN) of eligible patients to the project lead (the ELS).

The ELS then approached patients who qualified for the HELP to explain the study. Those who wished to participate were enrolled in the HELP notwithstanding their participation in the research project. All HELP patients and their caregivers were provided with information about the program through a pamphlet and one-to-one discussions with the ELS prior to their agreeing to participate. Those patients interested were given a Letter of Information and Consent (Appendix E). Patients who agreed to participate were grouped into two groups: patients enrolled in the HELP, and patients from the control unit who did not participate in the HELP. The outcome measures of the participating patients collected by Grand River Hospital staff members were then used for secondary data analysis to compare the two groups.

3.3.1.2 Caregivers

Caregivers of patients on the Restorative Care units (UT4 and GR3) were provided with an envelope containing a Letter of Information (Appendix E) and a copy of a self-report caregiver questionnaire (Appendix A). The ELS either personally gave the questionnaire to family members or placed the enveloped self-report questionnaire in the patients' room, on the bedside table or bulletin board, for the caregiver to fill out. The caregiver was instructed to drop off the completed

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self-report questionnaire in a sealed, addressed envelope to a mailbox located on the unit. Return of the completed self-report questionnaire was indicated as permission to use responses in the study.

3.4.2 Qualitative Data

3.4.2.1 Patients and Caregivers

To collect the qualitative data in this study, purposeful sampling was employed. Recruitment of patients and caregivers for the focus group interviews took place through the use of posters (Appendix B) placed throughout the pilot Restorative Care unit (UT4). Interested patients and caregivers were asked to contact the Clinical Nurse Specialist (CNS) or the student investigator by either phone or e-mail for further information. If the recruitment posters did not yield a sufficient number of participants (6-12 participants), the project lead (the ELS) approached patients and caregivers identified by the Resource Nurse to explain the focus group and provide them with a copy of the recruitment poster.

3.4.2.2 Volunteers

Recruitment of volunteer participants for the focus group interviews took place through e-mail. Volunteers on the pilot Restorative Care unit (UT4) or those who have been involved in the implementation of the HELP were e-mailed a recruitment poster (Appendix C). Interested volunteers were asked to contact the CNS or the student investigator by phone or e-mail if they wished to participate in the study. The project lead (the ELS) also approached volunteers to explain the focus group and provide them with a copy of the recruitment poster.

3.4.2.3 Staff

Nursing and therapy staff members involved in the implementation of the HELP were e-mailed a copy of the recruitment poster (Appendix D) as an invitation to participate in the focus group interviews. Interested staff members were asked to contact the CNS or the student investigator by phone or e-mail. The project lead (the ELS) also approached nursing and therapy staff members to explain the focus group and provide them with a copy of the recruitment poster.

In addition, other staff members considered to be key informants in the implementation of the HELP were asked to participate in semi-structured individual interviews. Administrative staff members who work on the pilot Restorative Care unit (UT4) or have been involved with the HELP at the Freeport site of GRH were each e-mailed a recruitment poster (Appendix D). They were also asked to contact the CNS or the student investigator by phone or e-mail if they wish to participate in the study.

3.5 Data Collection

This study employed primary data collected using focus group and individual interviews and secondary data analysis of both patient outcome measures and caregiver self-reported questionnaires collected by Grand River Hospital (GRH).

3.5.1 Quantitative Measures

Two methods of quantitative data collection were conducted by GRH and subsequently analyzed as secondary data in this quasi-experimental untreated control group design with pretest and post-test (Cook & Campbell, 1979): patient outcome measures and caregiver self-reported

questionnaires. Staff collected outcome measures at admission and discharge for each patient enrolled in the study, as well as self-reported questionnaires from participating caregivers until June, 2014. Therapy (OT/PT) staff collected the Functional Independence Measure (FIM) and the Montreal Cognitive Assessment (MoCA) measures; and the nursing staff collected the CAM. Data collected was then recorded in the Electronic Medical Records (EMR) at GRH. Following discharge, the Clinical Nurse Specialist (CNS) collected demographic data, discharge location, length of stay, number of falls, and the CCI through a chart review process. Each clinician-assessed outcome measure was chosen with consideration to its feasibility, acceptability and appropriateness for quantifying relevant outcomes. The measures are presented below with those currently used in everyday practice at GRH presented first.

Measures Used in Current Practice:

Patient Characteristics

Patient characteristics such as age, sex, admitting diagnosis, pre-admission place of residence, length of stay and discharge location were obtained from the patients' electronic medical record (EMR) by the ELS or the CNS.

Montreal Cognitive Assessment (MoCA)

The MoCA (Nasreddine et al., 2005) is a 30-item screening tool for dementia and mild cognitive impairment (MCI). It assesses multiple domains of cognitive functioning, including visuospatial, short-term memory, attention, recall, and working memory (Ismail et al., 2010). It takes approximately 10-15 minutes for completion. The MoCA is readily available (www.mocatest.org) and appropriate for a variety of clinical populations (Larner, 2012). It has demonstrated a sensitivity

of 90% to detect MCI and a specificity of 87% (Nasreddine et al., 2005). The MoCA is the

screening tool currently used by Occupational Therapy (OT) at GRH to screen for cognitive

impairment. MoCA data was extracted from the EMR by the ELS or the CNS.

Short-term Memory and Recall

Short-term memory and recall was assessed using these domains of the MoCA.

Confusion Assessment Method (CAM)

The CAM (Inouye et al., 1990) is a screening tool for the detection of delirium derived from the

DSM-III-R criteria for delirium including acute changes in mental status, fluctuating course,

inattention, disorganized thinking, psychomotor agitation or retardation and altered level of

consciousness. It was developed to enable individuals who are not trained in psychiatry to quickly

and accurately detect delirium. It has demonstrated sensitivity ranging from 94% to 100% and

specificity from 90% to 95%; as well as a positive predictive accuracy from 91% to 94% and

interrater reliability ranging from 0.81 to 1.0 (Wei et al., 2008). The CAM is used routinely by

clinicians at GRH. CAM data was extracted from the EMR by the ELS or the CNS.

Type and duration of therapy

Amount of time spent in therapy, frequency of therapy sessions and type of therapy (OT vs PT) was

recorded by therapy staff for all patients in the study.

Length of Stay, Discharge Location

Length of stay and discharge location was extracted from the EMR by the ELS or the CNS.

Number of falls

Fall incidents are recorded by nurses in the Patient and Visitor Safety Reporting System (RISKPRO) as per the hospital's Post Fall Management Policy and was extracted from the RISKPRO data base by the ELS or the CNS.

<u>Measures That Are Not Routinely Recorded or Collected:</u>

Functional Independence Measure (FIM)

The FIM (Keith et al., 1987) is an 18-item standardized assessment of motor function (13 items) and cognition (5 items). FIM items are scored on a 7-point scale from 7 (independent) to 1 (dependent) with an overall maximum score of 126. The FIM can be broken down into motor function and cognitive subscales with maximum scores of 91 and 35 respectively. The reliability and validity of the overall FIM scale and its two subscales has been well established (McDowell, 2006). While the FIM is a major component of the Canadian Institute of Health Information's (CIHI) National Rehabilitation Reporting System (NRS) and must be completed on all patients admitted to a rehabilitation setting in Ontario (Canadian Institute for Health Information, 2007), the Restorative Care Program is not classified as a rehabilitation program for the purposes of FIM reporting to CIHI. Permission was granted from CIHI to collect FIM data on the Restorative Care patients. While FIM data is not routinely recorded for patients in Restorative Care, the elements of the assessment are part of usual care. Therapy and nursing staff assessed and recorded patients' FIM scores in the EMR. Scores were extracted by the ELS or the CNS.

Rehabilitation Efficiency

Rehabilitation efficiency was measured by dividing the change in FIM scores from admission (t1)

to discharge (t2) by the length of stay.

Charlson Co-morbidity Index (CCI)

The Charlson Co-morbidity Index (Charlson et al., 1994) was used to assess co-morbidity at

admission (pretest). This index predicts 1-year mortality based on the presence or absence of 22

conditions according to their relative risk of death and patients' current age. Relative risk of death

calculated between 1.2 and <1.5 receives a score of 1; 1.5 to <2.5 is scored 2; and 2.5 to <3 receives

a score of 3. AIDS and metastatic solid tumors receive a score of 6. A further point is added for

each decade above age 50. The CCI was calculated by the ELS.

Caregiver Questionnaire

A caregiver questionnaire (Appendix A) was developed specific to this study. The questionnaire

collects information on caregiver characteristics (e.g., gender) (Allen et al., 2012), kin relationship

(Allen et al., 2012), geographic distance from care recipient (Fast et al., 2004), co-residence (Allen

et al., 2012), and caregiver self-reported health (Buhr et al., 2006; Gaugler et al., 2003) that are

known to predict placement in long-term care. Questionnaires were collected by the CNS.

3.5.2 Qualitative Measures

Qualitative methods can generate rich, detailed, valid data that generally allow the study

participants' perspectives to remain intact (Steckler et al., 1992). In this study, qualitative data

collection and analysis was used to gain an in-depth understanding of how participants perceive the

HELP, why participants react to the program the way that they do, why the HELP has had specific

effects, and the consequences of program implementation (Steckler et al., 1992). This information helped to indicate the acceptability (i.e., satisfaction) and feasibility (i.e., practicality) of the implementation of the HELP in a rehabilitation setting.

3.5.2.1 Focus Group Interviews

The purpose of focus group interviews is to collect qualitative data that are often inductive and naturalistic. Focus group interviews are particularly useful to determine the "perceptions, feelings, and thoughts of people about issues, products, services and opportunities" (Krueger & Casey, 2000, p. 4). The dynamic nature of focus group discussions is intended to encourage a variety of perspectives (Krueger, 1994). In this study, the perspectives of individuals involved with the HELP at the Freeport site of GRH, including volunteers, staff, patients and their caregivers were explored.

Procedures recommended by Morgan and colleagues (1998) were followed for conducting focus groups. Typically, focus group discussions are 60-90 minutes and consist of 6-12 participants (Krueger, 1994; Morgan et al., 1998). Smaller sized focus groups and shorter sessions (under 60 minutes) were considered more realistic for the older patient population and their caregivers, as well as busy staff members and volunteers.

All focus group interviews took place at the Freeport site of GRH. A quiet room able to accommodate at least eight people, referred to as the board room, was booked in advance by the CNS for the focus group interviews. The facilitator was accompanied by the same recorder for each focus group. The recorder developed a seating plan to identify participant location and assisted in

taking field notes while the facilitator led the discussion. As recommended by Myers (1999), the recorder also noted initial comments made by each speaker; and later, pseudonyms were used in the transcripts to identify speakers.

Prior to the focus group interview, a Letter of Information and Consent for participation and audiotaping (Appendices E, F, and G) was distributed to each participant. All focus group interviews were audiotaped, as each participant provided consent. Participants were also asked to complete a brief background questionnaire (Appendix H) to obtain general information for sample description purposes. Discussion began with an icebreaker and followed the script as outlined in Appendix I. Participants were given the opportunity to write down any comments that they did not get a chance to make, or may have been too uncomfortable to say during the focus group interview. At the end of the interview, the facilitator (student investigator) offered all participants the chance to provide a final comment. Finally, thank you letters were distributed (Appendix J).

All focus group participants were provided with food and beverages during the focus group interviews. Staff participants were compensated for two hours of work time by GRH.

3.5.2.2 Individual Interviews

Individual interviews were conducted with other staff members involved in the administration and implementation of the HELP. At the request of the program leaders, issues of acceptability, feasibility and sustainability were examined following a semi-structured interview guide (Appendix M). Interviews were scheduled to take place in the offices of the participating staff members. Participants were provided with a Letter of Information and Consent form for

participation and audiotaping (Appendix L) prior to each interview. The interviews were kept brief (approx. 10-20mins). Consent was obtained for each interview to be audiotaped. Researchers commonly audiotape interviews that they conduct to ensure accuracy in capturing responses to open-ended questions (Steckler et al., 1992). Before the interview finished, participants were given the opportunity to write down any concluding statements that they had not mentioned beforehand. Following each interview, a thank you letter (Appendix N) was distributed.

Three additional one-on-one interviews were conducted with patients and their caregivers who were interested in participating, but were unable to attend the scheduled focus group interview. The same procedures were followed (as mentioned above) in the individual interviews with patient and caregiver participants.

3.6 Data Analysis

The study was conducted using a mixed methods design because interventions, such as the HELP, are complex phenomena that require multiple methodologies to appropriately understand or evaluate them. Neither quantitative nor qualitative methods were given priority in this study; rather, both quantitative and qualitative methodologies were considered equal and parallel (Steckler et al., 1992; Tashakkori & Teddlie, 2003).

During the initial analysis, quantitative and qualitative data were analyzed separately. In the data interpretation phase, results were merged in order to cross-validate the study findings (Creswell & Plano Clark, 2007; Siddiqi et al., 2011). Comparisons were then made examining similarities and differences in the results from the two data types (Steckler et al., 1992; Siddiqi et al., 2011). Steckler and colleagues (1992) refer to this approach as the triangulation of methods. Triangulation

involves using findings from one method to collect and verify findings from other methods, helping

to remove any biases that may emerge using only one method (Tashakkori & Teddlie, 2003;

Johnson & Onwuegbuzie, 2004).

3.6.1 Quantitative Data

For this quasi-experimental untreated control group design with pretest and post-test (Cook

& Campbell, 1979), the quantitative data analysis were conducted using the software package IBM

SPSS Statistics (SPSS) version 22 (IBM, 2014). Entry of the outcome scores, demographic data,

and caregiver self-reported questionnaires were completed by the ELS or the CNS. The patient and

caregiver data were then de-identified by assigning participants numbers. Following the de-

identification of the data, all data cleaning procedures as well as the secondary data analysis were

conducted by the student investigator.

Frequency and percent distributions were reported for all categorical demographic variables

to describe the sample of patient and caregiver participants. For all continuous level data (e.g., age,

FIM scores), the range, mean, and standard deviation were reported. Group (intervention and

control) comparisons of variables such as age, gender, MoCA score, and other outcome scores were

investigated using appropriate statistics. Chi-square tests were used for variables that are categorical

(e.g., gender) to examine differences between observed and theoretically expected values (Norman

& Streiner, 1994). T-tests were used for continuous variables (e.g., FIM scores) to compare the

means of the two groups (Norman & Streiner, 1994).

To examine differences in outcomes between the intervention group (UT4) and the control

group (GR3), change scores were conducted for each measure by subtracting the baseline score

from the follow-up score. Change scores determine the difference between the value of a variable measured at one time (e.g., follow-up) from the value of the same variable measured at an earlier point in time (e.g., baseline), and are commonly used to analyze data collected more than once (e.g.,pre-post treatment) on the same individuals over time (Finkel, 2004).

Non-paired t-tests were conducted to determine whether differences in outcomes, indicated by the change scores, between patients on the intervention unit (UT4) and those on the control unit (GR3) were statistically significant. In addition, non-paired t-tests were then conducted to determine whether differences in outcomes, indicated by the change scores, between patients who received the HELP and those who did not were statistically significant. The means of the change scores were used to compare the two groups. P-values of less than or equal to 0.05 were considered statistically significant.

3.6.2 Qualitative Data

3.6.2.1 Focus Group Interviews

Immediately following each focus group interview, the facilitator and recorder debriefed, in which both observers shared their impressions of the session (Morgan et al., 1998; Myers, 1999). The debriefing session was also audiotaped for later analysis. Qualitative data gathered through the focus group interviews were converted into transcriptions by the student investigator. All of the focus group data, including transcripts, field notes, and debriefing notes, were analyzed using recommended qualitative procedures (Krueger, 1994; Morgan et al., 1998).

Each transcript was printed and thoroughly read; and emergent coding was used to manually develop codes. Emerging and relevant codes were highlighted using a distinct colour for each category. Text highlighted in the same colour was grouped together to sort and organize the data, creating themes (Harris, 2010). The data was subsequently reviewed to ensure that the emergent codes were well-grounded to fit the data. Codes that were poorly represented in the data were eliminated. To ensure reliability of the data-coding process, member checking was conducted during the qualitative analysis by e-mailing participants who provided their contact information in the Letter of Information and Consent forms (Appendix E). Member checking helped to ensure that the designated themes were accurate and relevant to the data. This strategy is often employed to produce high-quality and rigorous qualitative research while enhancing credibility of the findings (Krefting, 1991; Tashakkori & Teddlie, 2003; Hsieh & Shannon, 2005).

Each focus group interview was analyzed individually before comparisons were conducted with the other interviews. Thus, the categories and themes within a particular focus group interview were examined before exploring those that may have emerged across groups. Once all of the focus group interviews had been individually analyzed, categories and themes were explored to look for similarities as well as differences among the interviews.

3.6.2.2 Individual Interviews

The qualitative data gathered through individual interviews was first converted into transcriptions by the student investigator. The processes used for analysis of the focus group interviews were also implemented for the individual interviews. Transcripts were analyzed separately using emergent coding procedures to establish core categories and themes within each

individual interview before exploring those that may have emerged across the interviews. Member checking was used by e-mailing those that provided their contact information in the Letter of Information and Consent forms (Appendix L) to ensure that the emerging themes were accurate and relevant to the data. Three staff participants responded and verified the findings.

Throughout the qualitative data analysis, consideration was given to: (1) words and meaning of the words; (2) the context of comments made (i.e., stimulus that triggered remark); (3) internal reliability (i.e., participant changing their position); (4) frequency or comprehensiveness of comments; (5) intensity of remarks; (6) specificity of reply (i.e., personal experiences and/or impersonal reactions); and (7) discovering the larger concepts (i.e., accumulated evidence of intensity, word use, body language, etc.) (Krueger, 1994).

CHAPTER FOUR

Results

4.1 Sample Characteristics

4.1.1 Quantitative Data

4.1.1.1 Patients

Comparisons between patients were examined in two ways: 1) patients on the intervention unit (UT4) versus patients on the control unit (GR3); 2) patients who received the HELP versus patients who did not receive the HELP. The patient groups did not differ significantly in any of the characteristics at admission, except the location where previous HELP interventions had been received. This finding is not likely to have had an effect on the cognitive and/or functional outcomes of patients, as the groups did not differ significantly in terms of whether or not they had received HELP prior to admission. The primary admission diagnosis for both the intervention group and the control group (50 percent of admissions in both groups) was fracture. Other diagnostic categories included neoplasms, and diseases of the skin and subcutaneous tissue; nervous system; digestive system; musculoskeletal system and connective tissue; genitourinary system; circulatory system; and endocrine, nutritional and metabolic systems. Scores on the Charlson Co-morbidity Index (CCI) were similar, with an average of 2.1 and 2.0 for the intervention and control groups, respectively.

The total amount of therapy, including physiotherapy, occupational therapy and speech language pathology, was similar between the study groups (Table 1). Average lengths of stay were

54.2 days and 60.5 days for the intervention and control groups, respectively. The majority of

patients were discharged home with assistance in both the intervention group and the control group

(33 percent *vs.* 34 percent), or to a retirement residence with assistance (28 percent *vs.* 27 percent).

Four patients died during hospitalization; complete information was not available for these subjects,

and they were not included in the study. The baseline characteristics of the patients of each study

group, according to unit, are shown below in Table 1.

Table 1: Characteristics of the patients, according to study group (by unit)

Characteristic	Intervention Group (N=58)	Control Group (N=42)
Age – yr		
Mean ± SD	82.7 ± 7.9	82.7 ± 9.0
Gender – no. (%)		
Female	35 (60)	27 (64)
Male	23 (40)	15 (36)
Pre-Admission Housing – no. (%)		
Own home	40 (69)	25 (60)
With relatives (not spouse) in relative's home	2 (3)	4 (10)
Retirement	16 (28)	13 (31)
Previous HELP – no. (%)		
Yes	8 (14)	9 (21)
No	51 (86)	33 (79)
Previous HELP Where – no. (%)		
GRH	2 (25)	6 (67)
St. Mary's	3 (38)	0
Cambridge	1 (13)	1 (11)
Guelph	0	0
Grove's	0	2 (22)
Other	2 (25)	0
Falls Prior – no. (%)		
.00	18 (31)	11 (27)
1.00	30 (52)	27 (66)
2.00	2 (3)	1 (2)
3.00	8 (14)	2 (5)
Admitting Diagnosis – no. (%)		
Fracture	29 (50)	21 (50)
Neoplasms/Nervous System	3 (5)	2 (5)
Genitourinary System	2 (3)	1 (2)
Respiratory System	1 (2)	0
Digestive System	2 (3)	2 (5)
Musculoskeletal System and Connective Tissue	3 (5)	2 (5)
Endocrine, Nutritional, Metabolic/Circulatory System	4 (6)	1 (2)
Skin and Subcutaneous Tissue	3 (5)	3 (7)
Other	10 (17)	9 (21)
CCMI		
Mean score ± SD	2.1 ± 2.1	2.0 ± 1.9
Total Amount of Therapy - no. of sessions		
PT		
Mean ± SD	33.2 ± 15.9	27.6 ± 15.8
OT		
Mean ± SD	24.9 ± 10.9	26.7 ± 15.5
SLP		
Mean ± SD	0.5 ± 1.3	0.2 ± 0.7
Discharge Location – no. (%)		
Own home	3 (5)	2 (5)
Home with relative (not spouse) in relative's home	2 (3)	2 (5)
Retirement home	4 (7)	2 (5)
Retirement home with CCAC	16 (28)	11 (27)
Nursing home	4 (7)	2 (5)
Home with CCAC	19 (33)	14 (34)
Home awaiting long-term care	2 (3)	1 (2)
Other	8 (14)	7 (17)

*Plus-minus values are means ±SD

**Percentages were rounded to the nearest whole number

4.1.1.2 Caregivers

The baseline characteristics of the caregivers, according to patient unit, are shown in Table 2. Caregivers of patients in the intervention group did not differ significantly from those of patients in the control group in terms of the recorded characteristics. Caregivers of the patients in the intervention group were mostly daughters (38 percent) and spouses (33 percent); daughters (56 percent) were the primary caregivers of most patients in the control group. The majority of caregivers of patients in the intervention group (42 percent) and the control group (48 percent) were retired. Most caregivers of patients in the intervention group (59 percent) and in the control group (44 percent) rated their health as good; with fewer caregivers of patients in the intervention group rating their health as excellent compared to those caring for patients in the control group (23 percent *vs.* 40 percent).

The majority of caregivers of patients in the intervention group (60 percent) and the control group (77 percent) did not live with those they cared for. Most caregivers of patients in the intervention group (52 percent) and the control group (50 percent) travelled a distance of 16-30 minutes to the patients' residence; and 16-30 minutes to Freeport (66 percent *vs.* 62 percent). Most caregivers of patients in the intervention group (32 percent) and the control group (60 percent) visited patients 1-3 times weekly. A third of caregivers of patients in both groups contacted their family member by phone 1-3 times weekly.

Table 2: Characteristics of the caregivers, according to study group (by unit)

Characteristic	Intervention Group (N=60)	Control Group (N=27)
Age – yr		
Mean ± SD	62.1 ± 14.9	60.8 ± 9.3
Gender – no. (%)		
Female	42 (74)	22 (85)
Male	15 (26)	4 (15)
Relation – no. (%)		
Spouse	20 (33)	3 (11)
Daughter	23 (38)	15 (56)
Son	11 (18)	4 (15)
Other relative	6 (11)	5 (19)
Employment – no. (%)		
Full-time	19 (35)	6 (24)
Part-time	6 (11)	3 (12)
Retired	23 (42)	12 (48)
Homemaker	5 (9)	4 (16)
Not employed at this time	2 (4)	0
Live with – no. (%)		
Yes	23 (40)	6 (23)
No	35 (60)	20 (77)
Distance to residence – no. (%)		
16 to 30mins	30 (52)	13 (50)
30mins to 1 hour	3 (5)	5 (19)
> 1 hour	6 (10)	4 (15)
Family member lived with	19 (33)	4 (15)
Distance to Freeport – no. (%)		
16 to 30mins	38 (66)	16 (62)
30mins to 1 hour	14 (24)	7 (27)
> 1 hour	6 (10)	3 (12)
Frequency of contact in person – no. (%)		
Once per week	10 (18)	1 (4)
1-3x per week	18 (32)	15 (60)
4-6x per week	5 (9)	2 (8)
Daily	11 (19)	4 (16)
More than once daily	13 (23)	3 (12)
Frequency of contact by phone – no. (%)		
Once per week	4 (9)	2 (8)
1-3x per week	14 (33)	8 (33)
4-6x per week	6 (14)	4 (17)
Daily	13 (30)	5 (21)
More than once daily	6 (14)	5 (21)
Self-Rated Health – no. (%)		
Excellent	12 (23)	10 (40)
Good	31 (59)	11 (44)
Fair/Poor	10 (19)	4 (16)

*Plus-minus values are means ±SD

**Percentages were rounded to the nearest whole number

4.1.2 Qualitative Data

4.1.2.1 Patients and Caregivers

A total of six patients participated in the interviews; three attended the scheduled focus group interview, and an additional three individual interviews were held. Five of the six participants were female.

Five caregivers (three female) of patients who participated in the HELP were interviewed. Four caregivers attended interviews together with the patients they cared for, and one was interviewed individually. Three were spousal caregivers, and two were siblings of patients who participated in the HELP.

4.1.2.2 Volunteers

A total of three HELP volunteers attended the scheduled focus group interview. The average age of participating HELP volunteers was 19 years, with one male and two female participants.

4.1.2.3 Staff

In total, thirteen staff members (11 females) participated in the interviews; nine attended the scheduled focus group interview, and four participated in one-on-one interviews. Participants consisted of nursing, therapy, and administrative staff members who were involved in the implementation of the HELP. The average age of participating staff members was 40 years.

4.2 Overall Effectiveness

Differences between patient groups were examined in terms of intervention unit (UT4) versus control (GR3) unit (Table 3), and whether patients received the HELP or not (Table 4). The point-prevalence rate of delirium at admission was higher on UT4 with six patients (10.9 percent) presenting a delirium, and one patient on GR3 (2.5 percent). Delirium prevalence was the same in the two units at discharge; with one patient on UT4 (2.5 percent) and one patient on GR3 (2.5 percent). There was a reduction of about 83% in the prevalence of delirium from admission to discharge on UT4, while delirium prevalence remained the same on GR3. These results were the same when comparing patients who did or did not receive the HELP, i.e., only one patient in each group had a delirium at discharge.

The mean score of the MOCA at admission was slightly lower for patients on UT4 than for those on GR3 (15.91 *vs.*17.98, P=0.085). At discharge, the average scores were similar for patients on both units (17.62 *vs.* 17.73, P=0.933). The mean change scores showed a trend toward greater improvement for patients on UT4 than for those on GR3 (1.40 *vs.* -0.14, P=0.096). Those patients who received the HELP had a significantly higher mean change score than patients who did not receive the HELP (1.97 *vs.* 0.76, P=0.049). At admission, the mean score of patients who received the HELP was slightly lower than that of patients who did not receive the HELP (15.68 *vs.* 17.37, P=0.172), with similar mean scores at discharge (17.83 *vs.* 17.58, P=0.861). These findings suggest that those patients who received the HELP had greater improvement in cognitive functioning than patients who did not receive the HELP.

At admission, the average score of the short-term memory and recall subscale of the MoCA was lower for patients on UT4 than on GR3 (0.96 *vs.* 1.58, P=0.058). At discharge, the mean scores of patients on both units were comparable (1.57 *vs.* 1.35, P=0.542). The mean change score of patients on UT4 was significantly greater than that of patients on GR3 (0.55 *vs.* -0.26, P=0.013). A greater difference in mean change scores was found between patients who received the HELP and those who did not receive the HELP (0.80 *vs.* -0.11, P=0.006). At admission, patients who received the HELP had a lower mean score than patients who did not receive the HELP (0.94 *vs.* 1.37, P=0.198). The mean scores were similar at discharge (1.80 *vs.* 1.30, P=0.183). Patients who received the HELP showed significantly greater improvement in scores on the short-term memory and recall subscale of the MoCA from admission to discharge compared to patients who did not receive the HELP.

The average score of the Functional Independence Measure (FIM) at admission was significantly lower for patients on UT4 than those on GR3 (55.82 *vs.* 66.73, P=0.002); and again at the time of discharge (79.24 *vs.* 89.97, P=0.035). The mean change scores were similar in the two groups (22.77 *vs.* 22.39, P=0.917), indicating that patients on UT4 improved at a rate comparable to that of patients on GR3 from admission to discharge. The mean score of the FIM at admission was significantly lower for patients who received the HELP than for patients who did not receive the HELP (54.12 *vs.* 63.68, P=0.010). At discharge, patients who received the HELP had a lower mean score than patients who did not receive the HELP, although not significantly (80.94 *vs.* 85.05, P=0.446). The mean change score of patients who received the HELP was slightly higher than those who did not receive the HELP, but the difference was not statistically significant (25.94 *vs.* 20.93, P=0.188).

At admission, the mean score of the cognitive subscale of the FIM was significantly lower for patients on UT4 than for those on GR3 (23.14 *vs.* 26.34, P=0.025). At discharge, the average score was slightly lower for patients on UT4 than for patients on GR3 (25.75 *vs.* 28.79, P=0.090). The mean change scores were similar for patients on both units (2.56 *vs.* 2.39, P=0.904). Patients who received the HELP had a significantly lower mean score at admission than patients who did not receive the HELP (22.15 *vs.* 25.72, P=0.016). Although not a statistically significant difference, the mean score of patients who received the HELP remained lower than that of patients who did not receive the HELP at discharge (25.53 *vs.* 27.75, P=0.238). The mean change scores were slightly higher for patients who received the HELP than those who did not (3.28 *vs.* 2.08, P=0.406).

The mean score of the motor subscale of the FIM at admission was significantly lower for patients on UT4 than for those on GR3 (32.80 *vs.* 40.37, P=0.004). At discharge, the average score of patients on UT4 was lower than that of patients on GR3 (53.29 *vs.* 61.18, P=0.064). The mean change scores were similar for patients on both units (20.13 *vs.* 20.03, P=0.975). Rehabilitation efficiency scores were also similar between the intervention and control units (0.4 *vs.* 0.5, P=0.675). At admission, the mean score of patients who received the HELP was significantly lower than the mean score of patients who did not receive the HELP (32.18 *vs.* 37.97, P=0.037). At discharge, the mean scores of patients who received the HELP and those that did not receive the HELP were similar (55.06 *vs.* 57.30, P=0.620). The mean change score of patients who received the HELP was slightly greater than of patients who did not receive the HELP, but the difference was not statistically significant (22.52 *vs.* 18.85, P=0.278). Rehabilitation efficiency at discharge was similar between patients who received the HELP and those who did not (0.5 *vs.* 0.4, P=0.675).

Table 3: Study outcomes during hospitalization, according to study group (by unit)

Study Outcome	Intervention Group (N=58)			Control Group (N=42)			P-Value		
	Pre	**Post**	**Change**	**Pre**	**Post**	**Change**	**Pre**	**Post**	**Change**
CAM – no. (%) Present Absent	6 (11) 52 (90)	1 (2.5) 57 (98)		1 (2) 41 (98)	1 (2) 41 (98)				
MoCA Mean score ± SD	15.9±5.4	17.6±6.4	1.4±4.4	18.0±6.2	17.7±5.8	-0.1±3.7	P=.085	P=.933	P=.096
Short-term memory and recall Mean score ± SD	1.0 ±1.4	1.6±1.7	0.6±1.4	1.6±1.8	1.4±1.6	-0.3±1.4	P=.058	P=.542	P=.013
FIM Total Mean score ± SD	55.8±17.6	79.2±25.0	22.8±17.0	66.7 ± 15.6	90.0±22.4	22.4±17.6	P=.002	P=.035	P=.917
Cognitive Mean score ± SD	23.1 ± 7.9	25.8±7.3	2.6±5.5	26.3 ± 5.2	28.8±10.1	2.4±7.9	P=.025	P=.090	P=.904
Motor Mean score ± SD	32.8 ± 12.2	53.3±20.2	20.1±14.4	40.4 ± 12.9	61.2±20.0	20.0±16.6	P=.004	P=.064	P=.975
Rehabilitation Efficiency Mean score ± SD		0.4±0.3			0.5±0.4			P=.675	
Number of Falls Mean ± SD		0.2±0.6			0.3±0.7			P=.487	
Length of Stay – no. of days Mean ± SD		54.2±23.6			60.5±33.1			P=.273	

  *Plus-minus values are means ± SD

  **Percentages were rounded to the nearest whole number

Table 4: Study outcomes during hospitalization, according to study group (by intervention)

Study Outcome	Intervention Group (N=35)			Control Group (N=66)			P-Value		
	Pre	**Post**	**Change**	**Pre**	**Post**	**Change**	**Pre**	**Post**	**Change**
CAM – no. (%) Present Absent	6 (17) 29 (83)	1 (3) 34 (97)		1 (2) 65 (98)	1 (2) 65 (98)				
MoCA Mean score ± SD	15.7±5.6	17.8±6.0	2.0±4.0	17.4±5.8	17.6±6.1	0.1±4.1	P=.172	P=.861	P=.049
Short-term memory and recall Mean score ± SD	0.9 ±1.4	1.8±1.7	0.8±1.5	1.4±1.6	1.3±1.6	-0.1±1.4	P=.198	P=.183	P=.006
FIM Total Mean score ± SD	54.1±17.8	80.9±25.1	25.9±16.0	63.7 ± 16.6	85.0±24.1	20.9±17.6	P=.010	P=.446	P=.188
Cognitive Mean score ± SD	22.1 ± 8.5	25.5±7.4	3.3±5.6	25.7 ± 5.8	27.7±9.1	2.1±7.1	P=.016	P=.238	P=.406
Motor Mean score ± SD	32.2 ± 11.8	55.1±20.7	22.5±14.6	38.0 ± 13.2	57.3±20.4	18.9±15.6	P=.037	P=.620	P=.278
Rehabilitation Efficiency Mean score ± SD		0.5±0.3			0.4±0.4			P=.381	
Number of Falls Mean ± SD		0.3±0.6			0.3±0.6			P=.785	
Length of Stay – no. of days Mean ± SD		52.3±22.8			59.2±30.2			P=.244	

  *Plus-minus values are means ± SD

  **Percentages were rounded to the nearest whole number

4.3 Perceptions of, and satisfaction with, the HELP

4.3.1 Patients and Caregivers

Theme 1: Patient and Caregiver Perceptions of the HELP

All caregiver participants assumed that the HELP interventions were somehow benefiting the patients' rehabilitation process, and that no component of the HELP was ineffective. Caregivers noticed that the patients' cognitive functioning in particular had improved since admission. One spousal caregiver illustrated the changes he observed in his wife:

> *"There was a comment earlier about delirium and trying to avoid it or minimize it, and I know my wife is a lot better now than she was when she first came in. Whether the program has helped, I'm not sure. If that's a purpose, then maybe it has helped. You know, she knows where she is and where she wants to go here, whereas at first she wasn't too sure what town she was in."*

Other caregivers recognized a marked difference in the patients' vitality throughout the hospital stay. One caregiver described the change in the patient's ability and desire to socialize from the time of admission to near discharge:

> *"She's a lot perkier now than she was a month ago. She's part of the conversation."*

Considerable discrepancy existed between patients' responses regarding the effectiveness of the HELP interventions. Some patients believed that the HELP interventions, specifically the exercise components, aided in their recovery. Other patients did not feel that the interventions had any impact on their rehabilitation process. Nonetheless, all patients understood that the HELP was intended to benefit them. One patient commented:

"I know in the back of my head that hey, it's for my good. So, I guess that's why I accept it and I think it's good, because it's good for me."

Some patients considered the HELP interventions, particularly those targeted toward cognitive impairment, to be very simple. It was recommended that they be modified, and perhaps include more challenging alternatives, as the therapeutic activities and reality orientation program interventions were referred to as juvenile and childish. One patient said:

"I think they are here to try to help, but I'm just not sure that what they do and things they ask are. Like, those little crossword puzzles that, they're embarrassing simple I think. Even though it makes us stop and think for a moment."

Many patients enjoyed participating in the HELP interventions and were aware of the advantages; however, they suggested that some of them could be unnecessary. It was noted that patients who are more cognitively and/or functionally impaired may have a greater need for the HELP than others, and interventions should be applied accordingly. In response to a patient stating that they did not understand why the HELP volunteers bothered with some interventions, one caregiver explained:

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"Every individual is different […] it's sort of like, you know, they ask him what day it is and he thinks this is monotonous, but some people need that."

Lack of knowledge about the HELP was common among both patients and caregivers. Patients were not familiar with the program when it was referred to by its name; and were unsure of its purpose. None of the participants were knowledgeable of the evidence about the effectiveness of the HELP, or what exactly the program involved. In regards to the HELP volunteers, one patient said:

"Well, I didn't really know that they were um, in a program. I just knew that they would turn up one, at different times."

In order to increase knowledge and awareness about the HELP among patients and caregivers throughout the hospital, one caregiver recommended:

"Maybe more publicity about it; maybe posters up saying the volunteer program and what they're doing, and what they're distinctive uniform or badge is so that you know a volunteer."

Theme 2: Patient and Caregiver Perceptions of the HELP Volunteers

Difficulty distinguishing the HELP volunteers from hospital staff, trainees and other volunteers emerged as a major theme. Patients' responses to questions often referred to hospital staff members, rather than the HELP volunteers. One caregiver recognized how the lack of distinction among the HELP volunteers and others may be confusing for patients:

"So, you see there's sort of a distinction between the volunteers and students working with doctors, the trainees. Um, and they're easy to become confused, you know, for the patients. They're just, you know, lots of people who are there to help, you know, in one way or another. So, maybe if they had a distinctive badge or something that said volunteer so you're sure that they're there for that reason, and they're not one of the nurse's assistants or student trainees."

Patients and caregivers believed that the HELP volunteers had good intentions, and were always applying their best effort. Many participants expressed appreciation for the HELP volunteers' attentiveness and willingness to assist patients. One patient commented:

"They're always willing to do whatever they can to make you feel better. Whatever it be, you know, whatever it is […] I think they really pay attention. They're not just doing it, well now what do you want, that sort of thing."

Both patients and caregivers felt as though the HELP volunteers wanted to help, and were not there because they had to be. One caregiver elaborated:

"I think the point that [participant] made about the voluntary nature of it. They're there because they want to be there, and you feel it. You know, when people are there because they really want to be there."

Interactions with the HELP volunteers were frequently referred to as friendly, pleasant, and enjoyable. Many patients and caregivers discussed certain HELP volunteers they had built a relationship with, and how much they enjoyed the volunteers' company. One caregiver described the HELP volunteers' presence:

> *"They're all very cute and charming. You know, enthusiastic, which is all good […] It's just contagious, you know, and so it's uplifting."*

The HELP volunteers' visits with patients were commonly mentioned as the most beneficial aspect of the program by all participants. Participants explained that the volunteers are not rushed; rather, they take the time to communicate with the patients. One caregiver emphasized the value of listening:

> *"I think the listening skills, the ability to listen, is very good. You know, the people we've had, and that helps with her recovery."*

It was recommended that the HELP volunteers receive further education and training to maintain their knowledge and skills. One patient suggested that the HELP volunteers participate in brief refresher training sessions before each shift:

> *"I think they could get, if we start at 3, they could get some training between 3 and 3:30."*

Participants also suggested that the HELP volunteers remain aware of the diversity of patients' conditions and circumstances. One caregiver recommended continual training for the HELP volunteers to be sensitized to such conditions and circumstances:

"I think a lot should be said too about the training. You know, that they should be aware that a lot of people are new here, and a lot of people may be under drugs, and they may not be coherent when they talk to them. You know, they may be, have memory problems or have dementia, or something like that. They should be sensitive to that, which they seem to be."

Theme 3: The HELP as a Way to Fill the Gap

The HELP was characterized by participants as a way to the fill patients' time that is not otherwise occupied. Many patients appreciated the HELP volunteers coming to see them when they were not already participating in other activities, or were unable to. One patient said:

"It's helping you because someone has come along in a moment when you're not doing anything and it fills up some of the time that is kind of not, um, you know, if you can't get down to do some of the things. You are just in your bed and somebody comes up, that's great; but um, so that's when I noticed it more, when I couldn't do anything myself sort of thing."

Caregivers pointed out that the days are often long and boring for patients staying in the hospital, with a limited amount of things to do. It was noted that a purpose of the HELP should be to provide patients with activities to keep them engaged during their hospital stay, when they are not otherwise occupied. One caregiver suggested:

"If the program's going to do its job, I think part of its job is taking the time that's not utilized in other ways. You know, I know maybe they have to work in physio sessions and one thing or another but I mean, time I mean, you know, it's so boring around here [...] I'm here for eight hours a day or that so, and you know, just try and think of things to do. So, there's lots of room for your volunteers, and not at the same time something else is going on."

Another way that participants felt that the HELP filled a gap was when patients did not have family and/or friends available to visit them in the hospital. It was mentioned that it is quite common for patients to be without family and friends during their hospital stay. One patient expressed empathy toward those in such situations:

"I feel sorry for people that come in here and have nobody to help make sure they're being well looked after."

The importance of the HELP volunteers visiting patients whose family and friends were unavailable was frequently discussed. Both patients and caregivers believed that the visiting aspect of the HELP is likely the most advantageous for the patients. One patient commented:

"I find that the most people got out of this was the plain old visiting. They don't need to be doing this or that, or exercise. They just need to see some friendly face and someone that's going to listen to them."

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It was noted that the HELP is also a way to fill the gap when hospital staff members are unavailable to attend to patients due to lack of time. Participants acknowledged that the hospital is short staffed, and those working are often very busy. One caregiver provided an example:

> *"The nurses, the entrance nurses, were very busy and then the first volunteer that came in and I think it was her first time too, her name was [HELP volunteer], she was very nice. She smiled and listened to [patient], and took her time; and even though everybody else was sort of rushing around because they were so busy, and I agree with [participant] that these people do an amazing job, but they are short staff, they're short staffed […] The volunteers fill a gap there. They're available; they're kind."*

4.3.2 Volunteers

Theme 1: Volunteer Perceptions of the HELP

Volunteering with the HELP was considered an opportunity for involvement with both the health care system and the patients. Many of the HELP volunteers hoped to become involved in a health profession, and others wanted to gain insight into patients' experiences in the hospital. One HELP volunteer explained:

> *"I find this actually gives you a huge opportunity because it's all volunteer-run. It's uh, really unique compared to all the other volunteer positions where you're just going around and visiting; whereas this one, it's really structured and you actually feel really involved in the patient's experience in the hospital."*

All participants believed that the HELP is effective for hospitalized older adults, and would recommend the program to a family member if needed. The HELP volunteers highlighted the support that the HELP provides to patients when their family and friends are unable to be with them in the hospital. One HELP volunteer said:

> *"I think that's a huge thing, just having someone to go in and visit with you, and talk to you, 'cause your family can't be there all the time [...] So it's kind of reassuring to know that, like if someone in your family is sick, that there's programs like this there to help them. [...] rehabilitate them."*

Theme 2: HELP Interventions

The HELP intervention thought to be the most effective was the therapeutic activities program to target cognitive impairment. Volunteers mentioned that patients also seemed to enjoy the activities more than other HELP interventions. One HELP volunteer described the ways in which the activities are noticeably effective:

> *"I think the activities are good too. Just 'cause I'll notice in the beginning, they, they don't want to talk to you; and you ask them the date and where they are, and they don't really know. But then you start talking about like, I'll be playing cards, and I'll ask them about their kids and where they're from, and suddenly they're like really involved in the conversation and their memory spikes up; and they're actually like being able to have an in-depth conversation with you once you're actually involving them in an activity [...] and kind of like stimulating their minds."*

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All participants agreed that there is no HELP intervention that is ineffective. However, the HELP volunteers suggested that the orientation component could be modified to be more effective. One HELP volunteer commented:

"I think orientation could be more effective […] I don't know what else you could ask but I feel like there could be more things to engage them on to kind of check their orientation."

Another one of the HELP volunteers elaborated on the suggestion to amend the orientation interventions to enhance the effectiveness:

"Yeah, I think like the orientation too because some people just look at the board and it's like oh, they're oriented, but really like, they had so many people telling them that they're just repeating what they've heard so many times […] So maybe like, different questions or I don't know."

Participants revealed that the HELP interventions designed to target sleep deprivation are not being adhered to. Although the HELP volunteers indicated they were willing to implement the sleep intervention, and assumed that it would be effective, the patients are generally not ready to sleep until after the final volunteer shift ends.

It was mentioned that patients occasionally do not wish to participate in the HELP interventions planned for them; and some would rather do other things instead. Volunteers recommended tailoring the HELP interventions according to what individual patients want. One HELP volunteer provided an example:

"I had a lady and like, she liked the visit and everything but she's like, oh I wish you guys could help me with stuff like I have to do; and then I was like, what do you want me to help you? And she's like, could you make my hair and help me put my make-up on? […] So I helped her put her make-up on and she was so happy. Like, that's like the thing she did every day when she was home and once she came here she couldn't do it herself 'cause her arm was injured, and she couldn't really use her left arm that well 'cause of her arthritis. So, it's like something she really wanted to, and the nurses were busy. Like, she even told me like I asked the nurses but I don't want to keep asking them, they're busy, they have other people. And she was happy that I helped her."

Volunteers also found that when they conducted interventions in the hospital's communal areas, other HELP patients were encouraged to participate collectively. It was suggested that collective interventions would be beneficial for HELP patients in numerous ways. One HELP volunteer described a positive experience that she had doing the interventions collectively:

"Sometimes when um, I'm seeing someone in um, in a dining room, let's say I do exercise with them, other people join in and I notice that they're from the HELP program. So, they do the exercises with me. Maybe have like, once a day or something like, all the patients from the HELP program together so they can interact […] 'Cause then they get to know each other or like, socialize, meet some new friends. Like once I had a visit with two ladies and they were both sitting beside each other, and I had to seat both of them. So, I had a visit with both of them at the same time and they became like friends. They got to know each other. They started talking and I was just there listening like okay, I'll let you ladies talk."

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Theme 3: Knowledge and Skills Acquired

Learning how to build relationships with patients was a key theme throughout the focus group discussion. Volunteering with the HELP was said to have improved participants' socialization skills, as volunteers were able to get to know the patients on a personal level. One HELP volunteer illustrated:

> "I saw like the HELP program, you could actually like get to know the patient; like see who they are, help them, just talk with them, make them feel better, play games, like do stuff they like and just like hang out with them."

Volunteers also learned how to interact with a diverse patient population through their role with the HELP. It was important to be aware of the different conditions and circumstances that volunteers may encounter in their interactions with patients, and to execute interventions accordingly. One HELP volunteer explained:

> "Also like the wording. Like, you have to know how to explain something to different people so they understand it. Like, language barrier or just like if they have hearing problems, sometimes you have to talk louder."

Theme 4: HELP Volunteer Training and Education

Partnering with fellow volunteers was perceived to be a useful training method by all participants. The volunteers considered training alongside other volunteers to be an opportunity to learn more about interacting with patients. One HELP volunteer discussed the benefits of partnering with other volunteers:

"I like the fact that [the ELS] gives like certain people opportunities to train other people, 'cause you really learn a lot about how you're interacting with the patients when someone else comes and watches you. You really have to like think, like am I doing this right […]. You learn a lot from that […]. It's easier to like start a conversation with the patients, or you don't have, it's not just talking to the patient. The other person can pitch in."

Although participants felt that training came with experience, many found initiating conversation with patients to be challenging. Volunteers also mentioned that they often have difficulty remembering everything they learned during the initial training sessions. One HELP volunteer said:

"When I'm unsure about things, if I can't remember from training because it was a year and a half ago, or if I'm not sure if I was trained on that, I can call [the ELS] anytime."

Theme 5: Relationships with Staff

All participants valued the continuous support that they receive from the Elder Life Specialist (ELS) to assist them in their volunteer role. The ELS was characterized as flexible, always available, and informative. Volunteers recognized the ELS's involvement with the staff, as well as patients and families, as a significant advantage. One HELP volunteer described how the ELS helps to prepare the volunteers before each shift:

"I like how when we come in she, like, we already have our patients that we're supposed to see but she also, if she's there, she tells us like tips; like what we should do with the patient, how we should approach them depending on how they're feeling today or their symptoms […] or she tells us like about the patient, like any changes that would be important to us."

Limited interaction with the clinical staff was identified as a common theme. Volunteers interacted minimally with nurses, and very seldom with other staff members. Some participants stated that they did not enjoy talking to the nursing staff, and the nurses did not seem to enjoy talking to them. Feelings of intimidation and being a nuisance were mentioned. One HELP volunteer commented on their experiences interacting with the nurses:

"It's kind of intimidating. Like, you have to like practice what you're going to say to them, or should I go to her or her. Wait, she looks nice, or no, she has like a mean face on. Like, they don't smile."

Theme 6: Lack of Knowledge about the HELP

Volunteers were frequently mistaken for hospital staff members, particularly nurses, by the patients. This was attributed to the patients' general lack of knowledge about the HELP, and forgetting about the role of the volunteers. One HELP volunteer elaborated:

"They're always like, you're my favorite nurse […]. They get really upset when you tell them you're not a nurse. Like, what do you mean you're not a nurse? Why are you here now?"

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Lack of knowledge about the HELP in the broader community was also recognized during the focus group discussion. When participants informed people about the HELP, they realized that very few individuals knew about the program. One HELP volunteer explained:

"Whenever I tell people like the program I volunteer for, none of them know what it is so I seem to go into like an hour long in-depth discussion with them about it."

A lack of knowledge about the role of the HELP volunteers was also identified. One HELP volunteer discussed responses from people about volunteering with the program:

"When I tell people like what I do at the volunteering, 'cause they think it's, they don't even know what it is […] they're like fascinated. They're like, oh, you do that there? […]. It intrigues them."

Volunteers noticed a lack of knowledge about the HELP among hospital staff members as well. It was said that the nursing staff in particular were not informed about patients who were participating in the HELP, and those who were not. One HELP volunteer spoke of an experience in which a nurse was not aware of their role with the patients:

"They're not as informed about the HELP program I think [...]. I was walking to see one patient the other day and then I walked by another patient, and I said hi to her because I knew her, 'cause we, she used to be on the program but they, they took her off [...] and she's like, can you do something for me? And the nurse came up and said don't worry, she's going to sit with you and stay with you for a while. And I was like no, I'm not actually, I have to go see someone else. But I stayed with her for a few minutes and then I left; and the nurse was like oh, I thought you were going to see her [...]. So they're not really informed as to who's actually on the program."

4.3.3 Staff

Theme 1: Perceived Barriers to the Successful Implementation of the HELP

Differing levels of knowledge about the HELP was evident through the interviews with staff members. Some staff members were familiar with the program, whereas others were unsure of what the HELP encompassed. Many participants did not know about the components, criteria, and operations of the HELP. It was suggested that this lack of knowledge about the HELP could be a result of staff fluctuation and turnover.

The need for more volunteers was identified as a barrier by all participants. Since the implementation of the HELP, staff members have struggled to increase and maintain the volunteer count. Most of the current HELP volunteers were postsecondary students with busy schedules; and many travelled a lengthy distance to get to the hospital. One staff member described the need for more mature HELP volunteers:

"We depend a lot right now on students and you know it's the nature of the game; they're only temporary. Their schedules are really crazy and so it's really hard sometimes to keep them for any length of time. We would really like to try to recruit some more mature volunteers to help us have some stability."

There was a particular need for HELP volunteers during time gaps, such as evenings, weekends, and when patients' family members were unavailable. The constant fluctuation in volunteers was thought to pose a problem because the HELP can only be effective with volunteer involvement and commitment. One staff member discussed how the organization of the HELP was dependent on the availability of the volunteers:

"They're having to organize the program around when the volunteers are available; not when we think we have our biggest need."

In addition to their limited availability, the capability of the HELP volunteers to adhere to all of the program interventions was restricted. The HELP interventions targeted at cognitive impairment were believed to be well adhered to by volunteers. Staff acknowledged that volunteers were unable to fully implement some interventions, such as those targeting sleep deprivation and immobilization, due to limitations. One staff member explained:

"Not that it's ineffective, but it's limited, is the mobilization aspect because a lot of them are non-weight bearing. They require assistance, beyond the capabilities of what the volunteers are allowed to do. So it limits what they are able to do. I don't think it's non-effective; it's just non-applicable."

Staff also found that the eligibility of patients for participation in the HELP was restricted. The program's limiting inclusion/exclusion criteria was described as disappointing, and even discriminating. Participants noted that many patients who were admitted may have benefited from the HELP, but were unable to participate due to certain conditions, age, and/or language barriers. Expansion of the program's inclusion/exclusion criteria, including lower age requirements and the development of a list of HELP volunteers that were able to speak other languages, was suggested.

All staff members partook in the referral of patients to the HELP. It was mentioned that there were more patient referrals than available places for the HELP due to a lack of resources. The resources for the HELP were further reduced following the expansion of the program from one to four units. Program leaders had to be more selective with supports and patient referrals. It was suggested that patients on all units have similar needs, and expanding the HELP using the same resources has likely resulted in a decrease in the effectiveness of the program.

Lack of feedback was frequently identified as a barrier to the successful implementation of the HELP. Most participants discussed the need for more information exchange between HELP volunteers and the hospital staff. It was unclear whether the HELP volunteers were providing any feedback on observed changes in the patients, and to whom this was being reported. One staff member talked about the need for feedback about the program:

"If HELP's noticed some changes, who are they telling? Are they telling nursing? Are they telling family? Are they telling physicians? Or are they telling their coordinator [the ELS], and [the ELS] is telling someone? So, just closing the loop there would be a bit more beneficial because if they're talking to them every day, then it would be nice to know kind of what's happening, right? I think that would be the main thing, more information going back and forth."

Theme 2: Perceived Benefits of the HELP

Implementation of the HELP did not generally increase the workload of the hospital staff. Most staff members' role within the program was confined to referring patients, with the exception of the ELS. Nursing staff were satisfied with the HELP because volunteers assisted with things they did not have time to do. One staff member described the effect that the HELP had on staff workload:

"I think it's been an adjunct because it's a service that wasn't being provided. So now, you know, the nursing workload's been the same but by having the HELP program, they've been able to offer something that wasn't being offered."

The HELP interventions were considered effective for patients who participated in the program. Participants felt that no component of the HELP was ineffective, and all were important. The interventions targeting cognitive impairment were said to be the most effective, as staff members observed noticeable gains in HELP patients' cognition, particularly their memory functioning. The interventions that target immobilization were also valued by participants. One staff member commented:

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"I found it helpful especially on, when I was working on the surgical floor with the range of motion, the exercises, the extra additional therapy they were getting because it's often the ones that I would ask family to do with the patients, and family doesn't follow through as often."

Patients were said to have little to lose and potentially a lot to gain with the HELP. The social aspect of the program was referred to as beneficial for patients. The HELP occupies patients when they are bored and lonely, which was identified as the leading complaint about hospitals, and provides them with someone to talk to. Participants recognized that many patients who are cognitively impaired upon admission or during their stay in the rehabilitation hospital improved with the HELP. One staff member discussed a patient who benefited from the HELP:

"We have one lady who has potential to improve and I think having someone there every day, and multiple times, because we were seeing her in therapy for the cognition, um, but she's really improved and I think probably, you know, their interactions have helped as much as our therapy […] just because it's keeping her on track. After we've got her on track, they keep her on track."

Participants also thought that the program could be more advantageous if the interventions were done collectively with other patients who participate in the HELP. One staff member suggested the HELP volunteers conduct program interventions with multiple patients:

"Especially in the dining room, it's a beautiful chance to not just do one-to-one but you know, facilitate, you know, more discussion between, so this is the patient, you help him talking, get him talking to the next person. You know, maybe introduce topics that, questions that they all can discuss. You know, um, it doesn't just have to be that one person. It could be bringing others into the group or facilitating that person into the group."

Family members of HELP patients were also thought to have benefited from the program, especially when they were not able to be with their loved one. Staff members were receiving positive feedback from patients' families about the supportiveness of the HELP. One staff member described how the HELP has affected family members:

"The families especially are loving it because they know that someone's with their loved one, especially when they can't get in, when they're working. Like, we're working with the sandwich generation right, which is […] they're caring for kids at home and loved ones and elders, right."

Staff members believed that the HELP volunteers had also benefited from their role with the program through their interactions with patients, particularly building relationships and noticing improvements in the patients' functioning.

Theme 3: Relationships with the HELP Volunteers

Limited interaction between hospital staff and the HELP volunteers was a major theme that emerged from the data. Volunteers were not known to initiate conversation often with the care team directly and when they did, participants described the scarce interactions as not so positive. Some staff members referred to the volunteers as a nuisance, and annoying. One staff member commented on their interactions with the HELP volunteers:

"I find that sometimes, and I don't, ok, annoying. I'm sorry to but, um, you know, especially if they don't come to the nursing staff to say, to talk about the patient first."

Some staff members did not see a need to communicate with the HELP volunteers on a clinical level; instead, they often asked volunteers to leave the room when they entered. Volunteers were said to be respectful of the staff's routine, ensuring that they did not interfere. However, this was not always regarded positively. One staff member explained:

"They're pretty quiet, right? Like I don't know, I find whenever I go in and if they're in there, they sort of jump up right away and they're willing to leave, which I think is in some ways good, right? Because if, as the professional you're there to do some intervention there with your patient, I guess it should take priority. Um, but it's almost, almost like they're too flighty, you know what I mean? And it's like they don't always need to just run out of the room, right?

Difficulty identifying the HELP volunteers was another common theme among staff members. Participants found it hard to discern the HELP volunteers from the other hospital volunteers. It was recommended that the HELP volunteers introduce themselves to the clinical staff, and put their picture up on the board along with their names.

Staff members were able to observe the HELP volunteers conducting the program interventions in common areas of the hospital, and perceived them to be competent in doing so. They felt that volunteers were adequately trained; however, follow-up training would be worthwhile. Participants indicated that the volunteers likely understand what they are taught during the training session, but may not anticipate real-world situations. One staff member elaborated:

> *"Maybe it's not the training, maybe it's the follow-up, right? That, you know, when you sit in the training as a volunteer you go oh yeah, yeah, that's uh, that sounds good, that sounds fine, yeah, I'll [...] then when you get out there in real like, right, it's not as clear as you thought it was [...] and there's situations and circumstances that you didn't anticipate and so, maybe it's more to do with the supervision and the follow-up, and the feedback and so on. And those early weeks, you know, with a new volunteer in terms of, you know, what kind of feedback they're given, and observations and so on, you know, their performance so to speak, right?"*

Staff participants thought that the HELP volunteers were unsure of their role sometimes, describing them as "deer in headlights". It was assumed that the HELP volunteers were unsure about where they fit within the care team, when they were allowed to be somewhere, and what they were supposed to do. One staff member suggested further training the HELP volunteers on role clarity:

> *"It seems like there's some discrepancy of what they're allowed to do and what they're not; and just maybe changing the, the training, or clarifying the training or something."*

Theme 4: Strong Coordination and Leadership is Key

Program leaders acted as a link between all of those involved with the implementation of the HELP, including the staff, volunteers, as well as patients and their families. Coordination of the HELP required the program leaders to communicate with all groups directly, in addition to facilitating communication between the groups.

Staff participants regarded their interactions with the program leaders to be very positive. All participants were constantly interacting with program leaders, as they discussed the program leaders' initiative to seek patient referrals for the HELP. The program leaders were said to be convenient to contact, and always available. Staff enjoyed working with the program leaders, and felt lucky to have them as members of the care team.

The program leaders were known to go above and beyond their assigned roles to enhance the HELP. Volunteer education was expanded to include external specialists from organizations, such as the Alzheimer's Society and the Parkinson's Society, in order to train the volunteers on conditions they might encounter with patients in the HELP. Extensive role-playing activities were added to the training process, in which the volunteers applied all HELP interventions on one another to prepare for their interactions with patients. One staff member discussed other activities that the program leaders had coordinated for the HELP volunteers:

"So, above and beyond the education that the HELP program actually gives the volunteers, we provide them with a little bit extra. So, we've also included, you know, games nights, pizza nights, so that the volunteers can come and interact with everybody so that they can feel more comfortable. They can know who the other volunteers are; they can feed off each other with questions and excitement like that."

4.4 Linking the Quantitative and Qualitative Results

Upon admission, delirium was more prevalent on UT4 (10.9 percent) than on GR3 (2.5 percent), indicating that patients who were admitted with delirium were more likely to receive the HELP. Patient and caregiver participants suggested that those who are more cognitively and/or functionally impaired likely have a greater need for the HELP than other patients. Staff members recognized that several patients who were cognitively impaired at admission participated in the HELP and improved.

The point prevalence rate of delirium at discharge was equal between the two units, with one patient on UT4 (2.5 percent) and one on GR3 (2.5 percent). These findings suggest a trend toward a reduction in delirium prevalence from admission to discharge for patients who received the HELP compared to those who did not. One caregiver described the visible improvement of a patient with existing delirium at admission. Other participating caregivers also noticed gains in patients' overall cognitive functioning since the time of admission.

Patients who received the HELP had a slightly higher mean change score on the Montreal Cognitive Assessment Method (MoCA) than that of patients who did not (1.97 *vs.* 0.76, P=0.049). Those who received the HELP had lower mean scores at admission than patients who did not receive the HELP (15.68 *vs.* 17.37, P=0.172), and similar mean scores between the groups at discharge (17.83 *vs.* 17.58, P=0.861). Results show significant improvement in cognitive functioning from admission to discharge for patients who received the HELP compared to those who did not. Although patients found the HELP interventions targeting cognitive impairment very simple, both volunteers and staff members believed them to be most effective.

The mean change score of the short-term memory and recall subscale of the MoCA was also significantly greater for patients who received the HELP in comparison to patients who did not (0.80 *vs.* -0.11, P=0.006). These findings indicate that the short-term memory and recall of patients who received the HELP improved significantly more from admission to discharge than those who did not receive the HELP. Both staff and volunteer participants observed noticeable improvements in cognition, particularly memory functioning, in patients who received the HELP. Volunteers specifically identified the therapeutic activities as the most effective and enjoyable for patients.

The average change score of the Functional Independence Measure (FIM) was slightly higher for patients who received the HELP than for patients who did not receive the HELP (25.94 *vs.* 20.93, P=0.188). At admission, the average score of patients who received the HELP was significantly lower than that of patients who did not receive the HELP (54.12 *vs.* 63.68, P=0.010), and remained lower at discharge (80.94 *vs.* 85.05, P=0.446). Results of both the cognitive and motor subscales of the FIM showed similar trends.

Those patients who received the HELP had a significantly lower mean score on the cognitive subscale of the FIM at admission than patients who did not receive the HELP (22.15 *vs.* 25.72, P=0.016), and a similar mean score at discharge (25.53 *vs.* 27.75, P=0.238). The mean change scores of the patient groups were similar (3.28 *vs.* 2.08, P=0.406). Patients who received the HELP found the interventions targeting cognitive impairment to be simple, and recommended modifications. Volunteers suggested the orientation and reality therapy interventions in particular be improved to enhance effectiveness. Caregivers however recognized that patients' ability to communicate with others, a component of the cognitive subscale of the FIM, had improved since participation in the HELP.

At admission, the mean score of the motor subscale of the FIM was significantly lower for patients who received the HELP than for those who did not (32.18 *vs.* 37.97, P=0.037). The average scores were similar between the two groups at discharge (55.06 *vs.* 57.30, P=0.620). The mean change score of patients who received the HELP was slightly higher than of patients who did not (22.52 *vs.* 18.85, P=0.278). Patients who participated in the HELP identified the interventions that targeted immobilization as most effectively helping them to recover. Staff participants also valued

the interventions that targeted immobilization but recognized that the HELP volunteers were limited

in their capacity to fully implement them.

CHAPTER FIVE

Discussion and Conclusions

5.1 Introduction

Although it has been established that delirium is prevalent in post-acute facilities (Marcantonio et al., 2003; McAvay et al., 2006; Jones et al., 2010), research is limited. Literature on delirium in rehabilitation hospitals is particularly scarce. It is unclear whether the condition can be prevented or managed in post-acute rehabilitation hospitals (Marcantonio et al., 2003). The Hospital Elder Life Program (HELP) was developed to prevent delirium and functional decline in hospitalized older adults, and has consistently been shown to be effective in acute care settings (Inouye et al., 1999; Inouye et al., 2000; Bogardus et al., 2003; Inouye et al., 2006; Rubin et al., 2006; Rubin et al., 2011; Mouchoux et al., 2011). To date, the HELP had not been evaluated in a rehabilitation hospital setting. This thesis has sought to examine the potential successes and barriers to the implementation of the HELP in a post-acute rehabilitation hospital setting by addressing the following research objectives:

1. To determine if changes in scores (pre-post treatment) on measures of functional and cognitive outcomes differ between individuals receiving the HELP (UT4 patients) and those not (GR3 patients);

2. To explore patient, caregivers, volunteers, and staff perceptions of, and satisfaction with, the HELP.

In this chapter, key findings are discussed and compared with the existing literature. Further directions for program implementation, study contributions, limitations, and suggestions for further research are also discussed.

5.2 Key Findings

All patients in this study were at risk for delirium with various predisposing risk factors, including advanced age, immobility, comorbidity, and cognitive impairment. The primary reason for admission to the post-acute rehabilitation hospital was a fracture, indicating functional impairment. This finding was not surprising as delirium incidence is quite high among geriatric hip fracture patients (Marcantonio et al., 2000; Milisen et al., 2001; Lundstrom et al., 2005), especially following surgery (Young & Inouye, 2007). As suggested by patient and caregiver participants, those patients with greater cognitive and/or functional impairment are most likely to benefit from the HELP. This finding is supported by Rubin and colleagues (2006), who proposed that patients admitted with at least one targeted risk factor for delirium could benefit from the HELP. This suggests that where hospitals do not have the resources to enroll all eligible patients into the HELP (Rubin et al., 2011), the program should be offered to patients with higher levels of cognitive and/or functional impairment (e.g., fracture).

Differences in the point-prevalence rates of delirium were evident between the patient groups at the time of admission. Rates were higher among patients on the intervention unit (UT4) than those on the control unit (GR3), indicating that patients with delirium at admission were more likely to receive the HELP. Previous research has demonstrated that targeting patients at a moderate-to-high risk for delirium is an efficient and cost-effective approach (Rubin et al., 2011). It may therefore be

most sensible to offer the HELP to patients at the greatest risk for delirium, or to those with an existing delirium. This finding was further strengthened by staff participants, who recognized that cognitively impaired patients were often selected to participate in the HELP and subsequently improved during their hospital stay.

The total point-prevalence rate of delirium at admission was 7%, which is slightly less than that reported in recent studies in acute hospital settings, with rates ranging from 10%-20% (McAiney et al., 2012; Ryan et al., 2013). Upon post-acute admission, Marcantonio and colleagues (2003) found an even greater prevalence of 23%. This discrepancy in the prevalence of delirium at admission to post-acute settings could be explained by a lack of detection, as it is well-established that the syndrome is frequently unrecognized by clinical staff (Knights & Folstein, 1977; Levkoff et al., 1988; Rummans et al., 1995; Meagher, 2001). It is necessary to first determine the occurrence and outcomes of delirium in a particular setting before developing strategies to prevent and manage the condition (Siddiqi et al., 2006). This study confirms that delirium is prevalent among older patients upon admission to post-acute rehabilitation hospitals; prevalence may be higher with improved detection.

At discharge, the point-prevalence rate of delirium was 2.5% on both units, demonstrating a reduction of about 83% in patients who received the HELP and no change in delirium prevalence among those who did not. These findings show a much larger reduction than previous research conducted by Marcantonio and colleagues (2003) who found that 64% of patients with delirium symptoms at admission to post-acute facilities exhibited the same number, or more, one week later; and only 14% of patients resolved their symptoms entirely. It is arguable that the decrease in

delirium prevalence from admission to discharge in patients who received the HELP at Freeport could be attributed to the program interventions.

The orientation and therapeutic-activities protocols were thought to be the most effective HELP interventions by staff, volunteers, and caregivers throughout the interviews. Many participants noticed a visible improvement in patients' cognition, particularly in their memory functioning, when they participated in these interventions. This was said to be especially true of patients with delirium upon admission. The results of measures used to assess cognitive impairment (e.g., the CAM and the MoCA) supported this finding. A small exploratory study found that reality orientation as well as simple and straightforward communication help to provide a sense of control for patients who had recovered from a delirium (Schofield, 1997). These HELP interventions may enhance patients' ability to interpret their surroundings and provide them with constant reassurance, orientation, observation, and comfort; all of which are proven strategies to most effectively manage delirium (Rummans et al., 1995). These findings may help to explain participants' perceived effectiveness of the orientation and therapeutic-activities protocols.

Participants discussed the effectiveness of other HELP interventions, specifically those targeting immobilization. Staff members found the early-mobilization protocol to be helpful; and most patients perceived it to be beneficial to their rehabilitation process. The quantitative results showed that patients who received the HELP had significantly lower mean scores on the motor subscale of the FIM at admission, and displayed higher rates of delirium; yet, the patient groups had similar mean change scores. In addition, the average length of stay was lower for the intervention group (54.2 days) than the control group (60.5 days), indicating that patients who received the

HELP recovered at a quicker rate than those who did not. While delirium is associated with poor functional recovery (Marcantonio et al., 2003), these findings suggest that the HELP may aid in enhancing the recovery process of older patients with existing delirium and/or poor functional capacity.

Social aspects of the HELP were frequently mentioned by participants as advantageous. Patient participants specified that the aspect they valued most about the program were the visits from the HELP volunteers, describing their interactions as friendly, pleasant, and enjoyable. The sincerity of the HELP volunteers in their attentiveness and willingness to help was appreciated by patients. Caregivers particularly liked that the HELP volunteers took the time to listen and communicate with the patients on a personal level. These findings may represent a form of psychosocial support for patients. Psychosocial support has been proven to be effective in managing delirium (Rummans et al., 1995), and can be provided by staff and/or family and friends. Specifically, the continuity of staff as well as observation and the provision of care from family and friends are suggested to offer patients reassurance, orientation, and lessen agitation and anxiety (Rummans et al., 1995). Research on the role of volunteers providing psychosocial support to patients is however limited in the literature.

Volunteer participants also emphasized the perceived benefits to the HELP volunteers providing psychosocial supports to patients. The HELP volunteers felt that their social skills were improved as a result of learning how to build relationships with patients. Getting to know the patients on a personal level and learning to interact with a different population were identified as advantages of volunteering with the program. Previous results found that HELP volunteers in acute

care and rehabilitation hospital settings believed their social skills were enhanced through the one-on-one interactions with patients, especially those patients without family and/or other visitors (Huson et al., 2014).

The HELP was perceived as a way to fill the gap when patients were unoccupied; when family and friends were unavailable; and when hospital staff was unavailable. Staff participants recognized that by providing patients with someone to talk to, the HELP addresses leading complaints about staying in the hospital - boredom and loneliness. It was generally believed that both patients and caregivers benefited from the HELP; patients are engaged during their hospital stay, while caregivers are supported through the program. One study found that the implementation of the HELP enhanced both patient and family member satisfaction with care at 92.3% (Inouye et al., 2006). Another study showed that nurses and nurses' aides were also satisfied with the HELP (Rubin et al., 2006). These findings indicate that the implementation of the HELP increases work satisfaction among clinical staff, as well as satisfaction with care among patients and family members.

Another key finding was that the Elder Life Specialist (ELS), a recommended member of the HELP team (Inouye et al., 2000), was considered a critical asset to the implementation of the program by all participants. The role was originally created to include responsibilities for program operations, interventions, and volunteer coordination (Inouye et al., 2000). It was confirmed by all participant groups that the ELS was not only fulfilling the role, but often going above and beyond the assigned responsibilities. In addition to coordinating the HELP, the ELS acted as a link between the volunteers, staff, patients and caregivers. All groups communicated with the ELS directly and

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described the interactions in a positive manner. Existing literature on the perceptions of and satisfaction with the role of the ELS is very limited. The findings indicate that the ELS is vital to the implementation of the HELP, contributing to both the achievement of program goals and the resolution of barriers.

Limited interaction and lack of collaboration between the volunteers and hospital staff, with the exception of the ELS, were identified as potential barriers to the successful implementation of the HELP. This is consistent with Rubin and colleagues (2011) who found that interpersonal conflict was a major challenge encountered during the dissemination of the HELP, and recommended team-building efforts and regular meetings to address these issues (Rubin et al., 2011). Both staff and volunteer participants considered greater information exchange necessary to enhance the HELP. One staff participant used the term "closing the loop" to describe the need for collaboration across disciplines. An earlier study recommended that staff members re-evaluate their roles, their goals, and their relationships with other disciplines to overcome the challenges of increasing collaboration and integrating the HELP volunteers into the care team (Bradley et al., 2004). These findings suggest that both groups participating in team-building efforts and regular meetings as well as thinking differently about their roles, their goals, and their relationships may help to increase feedback and collaboration between the HELP volunteers and hospital staff.

A challenge for most staff participants was distinguishing the HELP volunteers from other hospital volunteers. This is consistent with the lack of recognition identified by HELP volunteers in acute care and rehabilitation hospital settings, who felt that clinical staff members did not distinctly recognize them or understand their role with the program (Huson et al., 2014). A lack of recognition

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was a recurrent theme among patient and caregiver participants, who had difficulty identifying the HELP volunteers and differentiating them from hospital staff, trainees, and other volunteers. Patient participants frequently responded to questions by referring to hospital staff members rather than to the HELP volunteers; and caregivers explained that patients may be confused about the role of the volunteers. These findings may indicate a general lack of knowledge about the program among all of the participant groups.

Patient participants did not generally recognize the HELP when it was referred to by name. None of the patients were knowledgeable about the purpose of the program, what it entailed, or the evidence about its effectiveness. Levels of knowledge about the HELP varied among staff participants. This could be due to staff turnover, which has been identified in the literature as a challenge to the dissemination of the HELP (Rubin et al., 2011). Volunteer participants also recognized that some staff members were not well-informed about the HELP, re-confirming this finding. The HELP volunteers believed that the initial training sessions were adequate; however, they struggled to remember all they had learned over time. In earlier focus group interviews, a need for continual education and training to refresh their knowledge and skills was emphasized by HELP volunteers (Huson et al., 2014). Staff members suggested that the HELP volunteers do comprehend what they are taught in training, but might not anticipate real-world circumstances that follow. These findings suggest that all participant groups are likely to benefit from further education and training about the program.

Many perceived barriers to the successful implementation of the HELP were a consequence of a lack of resources. Specifically, the need for more HELP volunteers was emphasized by staff

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participants throughout the interviews. Volunteer turnover has been a struggle since the initial implementation of the program, as the majority of volunteers are students with busy schedules. This finding is verified by Rubin and colleagues (2011) who further suggested techniques to enhance recruitment and retention, such as having the program leaders initiate collaborations with local academic institutions. Program leaders at Freeport have recently adopted similar tactics (e.g., collaborating with local community services) to recruit a more mature population, in addition to the current student volunteers. The implementation of these strategies could address the need for more HELP volunteers by increasing recruitment and retention.

The need for more HELP volunteers restricted many aspects of the program, including adherence to the mobility and sleep interventions. Staff participants proposed that the interventions targeting sleep deprivation in particular could be fully implemented if more HELP volunteers were available. Previous studies that have implemented the HELP were also unable to fully adhere to the sleep protocols (Bradley et al., 2006; Caplan & Harper, 2007). A study that implemented four of the six HELP interventions, excluding both the mobility and sleep protocols, found that patients who received the program had more positive clinical outcomes than those who did not (Caplan & Harper, 2007). These findings indicate that participation in the HELP increases the likelihood of positive clinical outcomes for patients, even when not all of the interventions can be implemented.

5.3 Directions for Further Implementation

To increase the effectiveness of the HELP interventions targeting cognitive impairment, volunteer participants, as well as patients and caregivers, suggested that the orientation and therapeutic activities protocols be modified. Alternative orientation questions and more challenging

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activities were suggested. It was also noted that sometimes patients did not wish to participate in scheduled HELP interventions, but would prefer to do other things with the volunteers. Volunteers recommended tailoring interventions according to the patients' wants and needs. In addition to individual interventions, many participants offered the idea of collective interventions with HELP patients to encourage participation and enhance opportunities for socialization.

Although all participant groups considered the social aspects of the HELP to be the most beneficial, the social interactions between the HELP volunteers and staff members were not described as positively. Neither participant group offered suggestions to address this perceived barrier. Previous research suggests team-building efforts and regular staff meetings in order to resolve interpersonal conflict (Rubin et al., 2011). One issue staff members identified was the lack of feedback they received from the HELP volunteers. Staff participants would like to know about any progress or change in the patients, and recommended that the volunteers implement a reporting mechanism to include all staff members involved with the program.

It was recommended that the HELP volunteers wear distinctive attire, such as badges or uniforms, so that individuals are able to identify and distinguish them from other volunteers, hospital staff, and trainees. Staff participants also suggested that the HELP volunteers introduce themselves, and put their picture up on the board with their names. Volunteers attributed the staff members' lack of recognition to the differing levels of knowledge about the HELP. Strategies to increase general knowledge and awareness about the program, such as placing posters up throughout the hospital, were recommended. Continual education and training of the HELP volunteers and clinical staff was also suggested to refresh their knowledge and skills, including role

clarity and real-world implementation, especially considering the high rates of turnover in both groups. This further education and training may be most helpful to participants if the sessions were combined, and the clinical staff and HELP volunteers were partnered to increase collaboration.

Efforts to recruit more HELP volunteers are presently being initiated. Similar to suggestions made in the literature (Rubin et al., 2011), program leaders at Freeport are building partnerships with local community services to recruit a larger and more diverse population of volunteers. Adherence to the interventions targeting sleep deprivation could be enhanced by obtaining more volunteers who have greater availability. With a sufficient number of volunteers, the inclusion/exclusion criteria of the HELP could be expanded to include more patients who may benefit from the program. Staff participants also suggested having HELP volunteers who speak multiple languages to accommodate patients whose first language is not English. A sufficient volunteer count may support the expansion of the HELP at Freeport.

5.4 Contributions

This thesis project makes several contributions to the limited research on delirium in post-acute rehabilitation hospitals. Firstly, it adds to the little research on the prevalence of delirium in rehabilitation hospital settings. Many older patients are unable to return home from acute care hospitals because of cognitive and physical impairment. These individuals are often discharged to post-acute facilities in need of rehabilitation. Yet, delirium in post-acute settings has not been well-investigated (Marcantonio et al., 2003). This thesis shows that delirium is prevalent, and can potentially be managed, in post-acute rehabilitation hospitals. This is the first study to examine the effectiveness of the Hospital Elder Life Program (HELP) in a rehabilitation setting. Results of this

research suggest that the HELP can be effective in improving the cognitive and physical functioning of patients at a moderate-to-high risk for delirium.

Furthermore, this thesis provides an in-depth understanding of the perceptions of, and satisfaction with, the HELP from a variety of perspectives (staff, volunteer, patient and caregiver). Few qualitative study designs have been used in earlier research to examine the potential barriers and successes of the HELP, and these have only focused on staff perspectives (Bradley et al., 2004 and 2005). The majority of the feedback on the HELP has been conducted with quantitative research methods, particularly self-reported satisfaction questionnaires, and much of this research has focused on acute care settings. Inouye and colleagues (2000) suggested that feedback about the implementation of the HELP from other sites is essential to enhance the program. This is the first study to explore staff, volunteer, patient and caregiver perceptions of, and satisfaction with, the HELP in a rehabilitation hospital setting. This thesis also adds to the limited research on the acceptability (i.e., satisfaction) and feasibility (i.e., practicality) of the HELP from the perspective of the volunteers; and is the only research to have explored the perspectives of the therapy staff.

The use of mixed methods strengthened the findings of this thesis project by providing greater depth, detail, and clarity than would designs using only one type of method. Methodological rigour was established by using a triangulation approach to address the research objectives. The use of qualitative methods allowed for an in-depth examination of the potential successes and barriers to implementation of the HELP in a rehabilitation hospital setting from the perspectives of patients, caregivers, staff, and volunteers. In addition, the qualitative results added meaningfulness to the quantitative data. For example, UT4 patients had significantly higher mean change scores on the

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short-term memory and recall subscale of the MoCA than did GR3 patients; and these results were verified by participants who recognized that patients' memory functioning was enhanced with participation in the HELP interventions. The consistency between the quantitative and qualitative results further validates the findings of this study.

5.5 Limitations

5.5.1 Quantitative Data

The findings should be interpreted in consideration of the limitations that were encountered. This study was conducted at a single site; and therefore, results may not be generalizable to other settings. The accuracy of the data cannot be verified because the quantitative data were collected by clinical staff. Randomization was not feasible because the data were collected within a hospital setting (GRH), and patients were assigned to units based on bed availability. This may have allowed for selection bias to have occurred. Patients on UT4, particularly those who received the HELP, had a higher prevalence of delirium than those on GR3, which indicates that patients displaying delirium symptoms may have been more likely to receive the HELP. As the clinical staff members were situated on each unit, it is also plausible that staff located on UT4 were more sensitized to delirium and thus better able to detect the condition. The HELP volunteers were also situated only on the intervention unit, which minimizes the threat of both cointervention and contamination.

Some potential threats to the internal validity of a non-equivalent untreated control group design (Cook & Campbell, 1979) should be considered. History, when events other than the treatment (e.g., staff turnover) affect groups unequally, could have occurred in the period that patient data was collected (September 2013-June 2014) on the intervention and control units at

Freeport. If patients in one group grew more experienced, tired, or bored than those in the other group during the data collection period, then maturation may have resulted. Validity may have been affected by testing, if some participants became increasingly familiar with tests (e.g., MoCA). The effects of maturation and testing may have inflated the differences in outcomes between the groups with time. As the average lengths of stay were 54.2 days and 60.5 days for the intervention and control groups, respectively, it is not likely that these threats to validity occurred during the patients' hospital stay.

The interaction of selection and treatment (Cook & Campbell, 1979, p. 73), a potential threat to external validity, might be applicable as the generalizability of the findings may be limited to older patients admitted to a post-acute rehabilitation hospital who satisfy the inclusion criteria (70yrs+, estimated LOS of 14 days+, ability to read and comprehend English). Caregivers who completed the self-reported questionnaires were not a random sample and may not be representative of the larger population. Caregivers completed the questionnaires individually and may not have had the opportunity to seek clarification if needed. While efforts were made to ensure that the questions were clear and comprehendible, these limitations could have increased the probability of inaccurate or incomplete responses. The self-reported questionnaire items were based on existing literature and the validity and reliability has not been established. The process of determining the validity and reliability of the questionnaire items was beyond the scope of this study.

5.5.2 Qualitative Data

Purposeful sampling procedures were used, including only those who worked on the pilot unit (UT4) or were involved in the implementation of the HELP. Those who chose to participate in

the focus group and individual interviews likely differ from those who did not wish to participate, and may not be representative of the larger staff, volunteer, patient and caregiver population. Although six had confirmed, only three of the HELP volunteer participants attended the scheduled focus group interview. This may have limited the generalizability of the results; however, a previous study that conducted focus group interviews with HELP volunteers in acute care and rehabilitation hospital settings showed similar results.

The qualitative data collection and analysis was conducted by one researcher (student investigator), and interpretation of the results may have been biased. The researcher employed efforts to ensure methodological rigour through early reflection of preconceptions and regular consultations with committee members to review the data during both collection and analysis procedures. A triangulation approach was used by integrating multiple methods (e.g., patient outcome measures, focus group and individual interviews) to verify the findings. Member checking was also used during the qualitative data analysis. Participants whose contact information was provided were e-mailed and asked to review the key findings from the interview in which they had participated, and to reply with feedback. Three staff participants replied and agreed with the findings. No volunteer participants replied to the e-mail. None of the patient and caregivers provided their contact information; thus, they were unavailable to participate in the member checking. Greater participation in member checking could have strengthened confidence in interpretation of the findings.

5.6 Directions for Further Research

This thesis project was intended as a pilot feasibility study. The findings may support future studies investigating the prevalence of delirium, as well as the implementation of the HELP, in post-acute rehabilitation settings. It was beyond the scope of this study to examine delirium incidence as it would require clinical staff to assess patients on a daily basis. Existing evidence on the incidence of delirium in rehabilitation settings is not yet well-defined, and more research is needed. The influence of the post-acute care environment to the development of delirium remains unclear. Future investigations could examine associations between patients with delirium and identified precipitating risk factors in the post-acute rehabilitation setting. Findings indicated that the HELP may serve as a useful delirium management strategy in a post-acute rehabilitation hospital, however additional research is warranted.

Several successes and barriers to the implementation of the HELP were identified in this study through focus group and individual interviews. Qualitative methods could be used to examine many of the key findings in more depth, such as the relationship between the staff members and volunteers, the role of the Elder Life Specialist, and perceived benefits of the program's social aspects. This is the only research to highlight these findings; and illustrates the benefits of a mixed methods approach and of including the perspectives of staff, volunteers, patients, and caregivers. Further research should thus incorporate multiple methods and various participant groups in order to gain a thorough understanding of the potential successes and barriers to implementation of the HELP and similar programs.

References

Allen, S.M., Lima, J.C., Goldscheider, F.K., & Roy, J. (2012). Primary caregiver characteristics and transitions in community-based care. *Journals of Gerontology- Series B Psychological Sciences and Social Sciences, 67B*(3), 362-371.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders.* 5th ed. Washington, DC: APA.

Anthony, J. C., LeResche, L., Niaz, U., Von Korff, M. R., & Folstein, M. F. (1982). Limits of the 'Mini-Mental State'as a screening test for dementia and delirium among hospital patients. *Psychol Med*, *12*(2), 397-408.

Ashton, C. M., Kuykendall, D. H., Johnson, M. L., Wray, N. P., & Wu, L. (1995). The association between the quality of inpatient care and early readmission. *Annals of Internal Medicine*, *122*(6), 415-421.

Blazer, D.G. & van Nieuwenhuizen, A.O. (2012). Evidence for the diagnostic criteria of delirium: an update. *Current Opinion in Psychiatry, 25*(3), 239-243.

Bogardus Jr, S. T., Desai, M. M., Williams, C. S., Leo-Summers, L., Acampora, D., & Inouye, S.K. (2003). The effects of a targeted multicomponent delirium intervention on postdischarge outcomes for hospitalized older adults. *The American journal of medicine*, *114*(5), 383-390.

Bradley, E.H. (2004). *Translating research into practice: speeding the adoption of innovative health care programs*. Vol. 724. Commonwealth Fund: New York, NY

Bradley, E. H., Webster, T. R., Schlesinger, M., Baker, D., & Inouye, S. K. (2006). Patterns of diffusion of evidence-based clinical programmes: a case study of the Hospital Elder Life Program. *Quality and Safety in Health Care*,*15*(5), 334-338.

Bradley, E. H., Webster, T. R., Baker, D., Schlesinger, M., & Inouye, S. K. (2005). After adoption: Sustaining the innovation a case study of disseminating the Hospital Elder Life Program. *Journal of the American Geriatrics Society*, *53*(9), 1455-1461.

Bucht, G., Gustafson, Y., & Sandberg, O. (1999). Epidemiology of Delirium. *Dementia and Geriatric Cognitive Disorders, 10,* 315-318.

Buhr, G.T., Kuchibhatla, M., & Clipp, E.C. (2006). Caregivers' reasons for nursing home placement: Clues for improving discussions with families prior to the transition. *Gerontologist, 46*(1), 52-61.

Burns, A., Gallagley, A., & Byrne, J. (2004). Delirium. *J Neurol Neurosurg Psychiatry, 75,* 362-367.

Canadian Institute of Health Information. (2007). *Inpatient rehabilitation in Canada, 2005.2006.* Ottawa: CIHI.

Caplan, G.A. & Harper, E.L. (2007). Recruitment of volunteers to improve vitality in the elderly: the REVIVE study. *Internal Medicine Journal, 37*(2), 95-100.

Charlson, M., Szatrowski, T.P., Peterson, J., & Gold, J. (1994). Validation of a combined comorbidity index. *Journal of Clinical Epidemiology, 47*(11), 1245-1251.

Chen, C.C., Lin, M.T., Tien, Y.W., Yen, C.J., Huang, G.H., & Inouye, S.K. (2011). Modified hospital elder life program: Effects on abdominal surgery patients. *Journal of the American College of Surgeons, 213*(2), 245-252.

Cohen, H. J., Feussner, J. R., Weinberger, M., Carnes, M., Hamdy, R. C., Hsieh, F., ... & Lavori, P. (2002). A controlled trial of inpatient and outpatient geriatric evaluation and management. *New England Journal of Medicine*, *346*(12), 905-912

Cole, M. G. (2004). Delirium in elderly patients. *The American Journal of Geriatric Psychiatry*, *12*(1), 7-21.

Cole, M. G. (1999). Delirium: effectiveness of systematic interventions. *Dementia and geriatric cognitive disorders*, *10*(5), 406-411.

Cole, M.G., McCusker, J., Bellavance, F., Primeau, F.J., Bailey, R.F., Bonnycastle, M.J., Laplante, J. (2002). Systematic detection and multidisciplinary care of delirium in older medical inpatients: a randomized trial. *CMAJ, 167*(7), 753-759.

Cole, M. G., Primeau, F. J., Bailey, R. F., Bonnycastle, M. J., Masciarelli, F., Engelsmann, F.… Ducic, D. (1994). Systematic intervention for elderly inpatients with delirium: a randomized trial. *CMAJ: Canadian Medical Association Journal*, *151*(7), 965.

Coleman, E.A., Smith, J.D., Frank, J.C., Min, S.J., Parry, C., & Kramer, A.M. (2004). Preparing Patients and Caregivers to Participate in Care Delivered Across Settings: The Care Transitions Intervention. *J Am Geriatr Soc, 52*(11), 1817-1825.

Cook, T.D. & Campbell, D.T. (1979). *Quasi-Experimentation: Design & Analysis Issues for Field Settings.* Boston: Houghton Mifflin.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.

Creswell, J.W. & Plano Clark, V.L. (2007). *Designing and Conducting Mixed Methods Research.* Thousand Oaks, CA: Sage.

Duffy, M.E. (1985). Designing nursing research: the qualitative-quantitative debate. *Journal of Advanced Nursing, 10,* 225-232.

Elie, M., Cole, M. G., Primeau, F. J., & Bellavance, F. (1998). Delirium risk factors in elderly hospitalized patients. *Journal of General Internal Medicine*, *13*(3), 204-212.

Fast, J., Keating, N., Otfinowski, P., & Derksen, L. (2004). Characteristics of Family/Friend care networks of frail seniors. *Canadian Journal on Aging, 23*(1), 5-19.

Finkel, S. (2004). Change scores. In M. Lewis-Beck, A. Bryman, & T. Liao (Eds.), *Encyclopedia of social science research methods.* (pp. 120-121). Thousand Oaks, CA: SAGE.

Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). "Mini-mental state": a practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*, *12*(3), 189-198.

Francis, J. & Kapoor, W.N. (1990). Delirium in hospitalized elderly. *Journal of General Internal Medicine, 5*(1), 65-79.

Francis, J., Martin, D., & Kapoor, W.N. (1990). A Prospective Study of Delirium in Hospitalized Elderly. *JAMA, 263*(8), 1097-1101.

Gaugler, J.E., Kane, R.L., Kane, R.A., Clay, T., & Newcomer, R. (2003). Caregiving and institutionalization of cognitively impaired older people: Utilizing dynamic predictors of change. *Gerontologist, 43*(2), 219-229.

Gibson, R. S. (2005). *Principles of nutritional assessment*. Oxford university press.

Gillick, M.R., Serrell, N.A., & Gillick, L.S. (1982). Adverse consequences of hospitalization in the elderly. *Social Science and Medicine, 16*(10), 1033-1038.

Gleason, O.C. (2003). Delirium. *American Family Physician, 67*(5), 1027-1034.

Glenny, C., Stolee, P., Sheiban, L., & Jaglal, S. (2013). Communicating during care transitions for older hip fracture patients: family caregiver and health care provider's perspectives. *Int J Integr Care, 13,* 1-13.

Gubrium, J. & Sankar, A. (1994). *Qualitative methods in aging research.* Thousand Oaks, CA: Sage.

Harris, M.J. (2010). *Evaluating Public and Community Health Programs.* San Francisco, CA: John Wiley & Sons, Inc.

Heckman, G.A., Hillier, L., Manderson, B., McKinnon-Wilson, J., Santi, S.M., & Stolee, P. (2013). Developing an integrated system of care for frail seniors. *Healthcare Management Forum, 26,* 200-208.

Heckman, G.A., McKinnon-Wilson, J., Hillier, L.M., & Manderson, B. (2011). Developing an Integrated System of Care for Frail Seniors in Waterloo-Wellington.

Heckman, G.A., Patterson, C.J., Demers, C., St. Onge, J., Turpie, I.D., & McKelvie, R.S. (2007). Heart failure and cognitive impairment: Challenges and opportunities. *Clin Interv Aging, 2*(2), 209-218.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research*, *15*(9), 1277-1288.

Huson, K., McCrory, C., & Stolee, P. (2014, October). *Examining the Hospital Elder Life Program in Acute Care and Rehabilitation Hospital Settings from the Perspective of the Volunteers*. Poster presented at the Canadian Association of Gerontology Conference, Niagara Falls, ON.

IBM. (2014). *IBM SPSS statistics* (Version 22).

Inouye, S.K. (2004). A practical program for preventing delirium in hospitalized elderly patients. *Cleveland Clinical Journal of Medicine, 71*(11), 890-896.

Inouye, S.K. (2006). Delirium in Older Persons. *N Engl J Med, 354,* 1157-1165.

Inouye, S.K. (1994). The dilemma of delirium: Clinical and research controversies regarding diagnosis and evaluation of delirium in hospitalized elderly medical patients. *The American Journal of Medicine, 97*(3), 278-288.

Inouye, S. K. (1999). Predisposing and precipitating factors for delirium in hospitalized older patients. *Dementia and geriatric cognitive disorders*, *10*(5), 393-400.

Inouye, S. K. (1998). Delirium in hospitalized older patients: recognition and risk factors. *Journal of Geriatric Psychiatry and Neurology*, *11*(3), 118-125.

Inouye, S.K., Baker, D.I., Fugal, P., & Bradley, E.H. (2006). Dissemination of the Hospital Elder Life Program: Implementation, Adaptation, and Successes. *J Am Geriatr Soc, 54,* 1492-1499.

Inouye, S.K., Bogardus, S.T., Baker, D.I., Leo-Summers, L., & Cooney, L.M. (2000). The hospital elder life program: a model of care to prevent cognitive and functional decline in hospitalized older patients. *J Am Geriatr Soc, 48,* 1697-1706.

Inouye, S.K., Bogardus, S.T., Charpentier, P.A., Leo-Summers, L., Acampora, D., Holford, T.R., & Cooney, L.M. (1999). A Multicomponent Intervention to Prevent Delirium in Hospitalized Older Patients. *N Engl J Med, 340*(9), 669-676.

Inouye, S. K., & Charpentier, P. A. (1996). Precipitating factors for delirium in hospitalized

elderly persons: predictive model and interrelationship with baseline vulnerability.

JAMA, *275*(11), 852-857.

Inouye, S.K., Foreman, M.D., Mion, L.C., Katz, K.H., & Cooney, L.M. (2001). Nurses' recognition

of delirium and its symptoms: comparison of nurse and researcher ratings. *Archives of*

Internal Medicine, 161(20), 2467-2473.

Inouye, S.K., Rushing, J.T., Foreman, M.D., Palmer, R.M., Pompei, P. (1998). Does delirium

contribute to poor hospital outcomes? *Journal of General Internal Medicine, 13*(4), 234-

242.

Inouye, S.K., Schlesinger, M.J., & Lydon, T.J. (1999). Delirium: A Symptom of How Hospital

Care Is Failing Older Persons and a Window to Improve Quality of Hospital Care. *Am J*

Med, 106, 565-573.

Inouye, S.K., Van Dyck, C.H., Alessi, C.A., Balkin, S., Siegal, A.P., & Horwitz, R.I. (1990).

Clarifying confusion: The confusion assessment method: A new method for detection of

delirium. *Annals of Internal Medicine, 113*(12), 941-948.

Inouye, S.K., Viscoli, C.M., Horwitz, R.I., Hurst, L.D., & Tinetti, M.E. (1993). A Predictive

Model for Delirium in Hospitalized Elderly Medical Patients Based on Admission

Characteristics. *Ann Intern Med, 119,* 474-481.

Institute for Clinical Evaluative Sciences. (2012). *Health outcomes for better information and care (HOBIC).* Retrieved February 2, 2014, from http://www.ices.on.ca/webpage.cfm?site_id=1&org_id=26&morg_id=0&gsec_id=0&ite _id=7129

Ismail, Z., Rajji, T.K., & Shulman, K.I. (2010). Brief cognitive screening instruments: An update. *International Journal of Geriatric Psychiatry, 25*(2), 111-120.

Johnson, N., & Fethke, C. (1985). Post-discharge outcomes and care planning for the hospitalized elderly. *Continuity of care: Advancing the concept of discharge planning*, 229-240.

Johnson, J.C., Gottlieb, G.L., Sullivan, E., Wanich, C., Kinosian, B., Forciea, M.A…Hogue, C. (1990). Using DSM-III Criteria To Diagnose Delirium in Elderly General Medical Patients. *J Gerontol, 45*(3), M113-M119.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14-26.

Jones, R.N., Kiely, D.K., & Marcantonio, E.R. (2010). Prevalence of delirium on admission to post-acute care is associated with a higher number of nursing home deficiencies. *J Am Med Dir Assoc, 11*(4), 253-256.

Kakuma, R., Galbaud Du Fort, G., Arsenault, L., Perrault, A., Platt, R.W., Monette, J…Wolfson, C. (2003). Delirium in Older Emergency Department Patients Discharged Home: Effect on Survival. *J Am Geriatr Soc, 51*(4), 443-450.

Keith, R.A., Granger, C.V., Hamilton, B.B., & Sherwin, F.S. (1987). The functional

    independence measure: A new tool for rehabilitation. *Advances in Clinical Rehabilitation,1,*

    6-18.

Knights, E.B., & Folstein, M.F. (1977). Unsuspected emotional and cognitive disturbance in

    medical patients. *Annals of Internal Medicine*, *87*(6), 723-724.

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *The American*

    journal of occupational therapy, *45*(3), 214-222.

Krueger, R.A. (1994). *Focus groups: A practical guide for applied research.* Thousand Oaks,

    CA: Sage.

Krueger, R.A., & Casey, M.A. (2000). *Focus Groups: A practical guide for applied research, 3rd ed.*

    Thousand Oaks, CA: Sage.

Landefeld, C. S. (2006). Care of hospitalized older patients: Opportunities for hospital-based

    physicians. *Journal of Hospital Medicine*, *1*(1), 42-47.

Larner, A.J. (2012). Screening utility of the Montreal cognitive assessment (MoCA): In place of– or

    as well as– the MMSE? *International Psychogeriatrics, 24*(3), 391-396.

Leslie, D.L.D., Zhang, Y.Y., Bogardus, S.T., Holford, T.R., Leo-Summers, L., & Inouye, S.K.

    (2005). Consequences of preventing delirium in hospitalized older adults on nursing

    home costs. *J Am Geriatr Soc, 53*(3), 405-409.

Levkoff, S., Cleary, P., Liptzin, B., & Evans, D. A. (1991). Epidemiology of delirium: an overview

    of research issues and findings. *International Psychogeriatrics*, *3*(02), 149-167.

Levkoff, S. E., Safran, C., Cleary, P. D., & Gallop, J. (1988). Identification of factors associated

    with the diagnosis of delirium in elderly hospitalized patients. *J Am Geriatr Soc, 36*(12),

    1099-1104.

Lundstrom, M., Edlund, A., Karlsson, S., Brannstrom, B., Bucht, G., & Gustafson, Y. (2005). A

    Multifactorial Intervention Program Reduces the Duration of Delirium, Length of

    Hospitalization, and Mortality in Delirious Patients. *JAGS, 53,* 622-628.

Mamon, J., Steinwachs, D. M., Fahey, M., Bone, L. R., Oktay, J., & Klein, L. (1992). Impact of

    hospital discharge planning on meeting patient needs after returning home. *Health services*

    research, *27*(2), 155.

Marcantonio, E.R. (2002). In: Lindesay, J., Rockwood, K., Macdonald, A., eds. *The management of*

    delirium in old age. Oxford University Press, Oxford, 123-152.

Marcantonio, E.R., Flacker, J.M., Michaels, M., & Resnick, N.M. (2000). Delirium is

    independently associated with poor functional recovery after hip fracture. *J Am Geriatr*

    Soc, 48(6), 618-624.

Marcantonio, E. R., Flacker, J. M., Wright, R. J., & Resnick, N. M. (2001). Reducing delirium

    after hip fracture: a randomized trial. *Journal of the American Geriatrics Society*, *49*(5),

    516-522.

Marcantonio, E.R., Goldman, L., Mangione, C.M., Ludwig, L.E., Muraca, B., Haslauer,

    C.M…Lee, T.H. (1994). A Clinical Prediction Rule for Delirium After Elective

    Noncardiac Surgery. *JAMA, 271*(2), 134-139.

Marcantonio, E.R., Simon, S.E., Bergmann, M.A., Jones, R.N., Murphy, K.M., & Morris, J.N. (2003). Delirium Symptoms in Post-Acute Care: Prevalent, Persistent, and Associated with Poor Functional Recovery. *J Am Geriatr Soc, 51*(1), 4-9.

McAiney, C.A., Patterson, C., Coker, E., & Pizzacalla, A. (2012). A Quality Assurance Study to Assess the One-Day Prevalence of Delirium in Elderly Hospitalized Patients. *Can Geriatr J, 15*(1), 2-7.

McAvay, G.J., Van Ness, P.H., Bogardus, S.T., Zhang, Y, Leslie, D.L., Leo-Summers, L.S., & Inouye, S.K. (2006). Older Adults Discharged from the Hospital with Delirium: 1-Year Outcomes. *JAGS, 54,* 1245-1250.

McCusker, J., Cole, M.G., Abrahamowicz, M., Han, L., Podoba, J.E., & Ramman-Haddad, L. (2001). Environmental risk factors for delirium in hospitalized older people. *J Am Geriatr Soc, 49,* 1327-1334.

McCusker, J., Cole, M.G., Abrahamowicz, M., Primeau, F., & Belzile, E. (2002). Delirium Predicts 12-Month Mortality. *Arch Intern Med, 162*(4), 457-463.

McCusker, J., Cole, M.G., Dendukuri, N., & Belzile, E. (2003). Does Delirium Increase Hospital Stay? *J Am Geriatr Soc, 51*(11), 1539-1546.

McDowell, I. (2006). *Measuring health: A guide to rating scales and questionnaires* (3rd ed.) New York, N.Y.: Oxford University Press.

Meagher, D. J. (2001). Delirium: optimising management. *BMJ*, *322*(7279), 144-149.

Milisen, K., Foreman, M.D., Abraham, I.L., De Geest, S., Godderis, J., Vandermeulen, E.,…
Broos, P.L.O. (2001). A Nurse-Led Interdisciplinary Intervention Program for Delirium in
Elderly Hip-Fracture Patients. *JAGS, 49,* 523-532.

Milisen, K., Lemiengre, J., Braes, T., Foreman, M.D. (2005). Multicomponent intervention
strategies for managing delirium in hospitalized older people: Systematic review. *J Adv
Nurs, 52*(1)*, 79-90.*

Morgan, D.L., Krueger, R.A., King, J.A., & Scannell, A.U. (1998). *Focus group kit.* Thousand
Oaks, CA: Sage.

Mouchoux, C., Rippert, P., Duclos, A., Fassier, T., Bonnefoy, M., Comte, B., ... & Krolak-
Salmon, P. (2011). Impact of a multifaceted program to prevent postoperative delirium in
the elderly: the CONFUCIUS stepped wedge protocol. *BMC geriatrics*, *11*(1), 25.

Myers, A.M. (1999). *Program evaluation for exercise leaders.* Champaign, IL: Human Kinetics.

Nasreddine, Z.S. (2003-2014). *The Montreal Cognitive Assessment (MoCA).* Retrieved from
http://www.mocatest.org/

Nasreddine, Z.S., Phillips, N.A., Bedirian, V., Charbonneau, S., Whitehead, V., Collin, I. et al.
(2005). The Montreal cognitive assessment, MoCA: A brief screening tool for mild
cognitive impairment. *JAGS, 53*(4), 695-699.

National Institute for Health and Clinical Excellence. (2010). *Delirium: diagnosis, prevention, and
management.* Clinical guideline 103. NICE, London.

Norman, G. R., & Streiner, D. L. (1994). *Biostatistics.* St. *Louis: Mosby.*

Onwuegbuzie, A. J., & Leech, N. L. (2004). Enhancing the interpretation of "significant" findings: The role of mixed methods research. *The Qualitative Report*, *9*(4), 770-792.

Ouldred, E., & Bryant, C. (2011). Delirium: prevention, clinical features and management. *Nursing Standard, 25*(28), 47-56.

Pompei, P., Foreman, M., Cassel, C.K., Alessi, C., & Cox, D. (1995). Detecting Delirium Among Hospitalized Older Patients. *JAMA, 155*(3), 301-307.

Rizzo, J.A., Bogardus, S.T., Leo-Summers, L., Williams, C.S., Acampora, D., & Inouye, S.K. (2001). Multicomponent targeted intervention to prevent delirium in hospitalized older patients: What is the economic value? *Medical Care, 39*(7), 740-752.

Rockwood, K. (1990). Delays in the discharge of elderly patients. *J Clin Epidemiol, 43,* 971-975.

Rockwood, K. (1999). Educational interventions in delirium. *Dementia and geriatric cognitive disorders*, *10*(5), 426-429.

Rockwood, K., Cosway, S., Stolee, P., Kydd, D., Carver, D., Jarrett, P., & O'Brien, B. (1994). Increasing the Recognition of Delirium in Elderly Patients. *J Am Geriatr Soc, 42,* 252-256.

Rockwood, K., Goodman, J., Flynn, M., & Stolee, P. (1996). Cross-validation of the Delirium Rating Scale in Older Patients. *J Am Geriatr Soc, 44,* 839-842.

Rockwood, K., & Mitnitski, A. (2011). Frailty defined by deficit accumulation and geriatric medicine defined by frailty. *Clinics in geriatric medicine*, *27*(1), 17-26.

Royal College of Psychiatrists. (2005). *Who Cares Wins: Improving the Outcomes for Older People Admitted to the General Hospital. Guidelines for the Development of Liaison Mental Health Services for Older People.* Royal College of Psychiatrists, London.

Rubin, R.H., Neal, K., Fenlon, K., Hassan, S., & Inouye, S.K. (2011). Sustainability and scalability of the hospital elder life program at a community hospital. *J Am Geriatr Soc, 59*(2), 359-65.

Rubin, R.H., Williams, J.T., Lescisin, D.A., Mook, W.J., Hassan, S., & Inouye, S.K. (2006). Replicating the Hospital Elder Life Program in a Community Hospital and Demonstrating Effectiveness Using Quality Improvement Methodology. *JAGS, 54,* 969-974.

Rummans, T.A., Evans, J.M., Krahn, L.E., & Fleming, K.C. (1995). Delirium in Elderly Patients: Evaluation and Management. *Mayo Clin Proc, 70,* 989-998.

Ryan, D. J., O'Regan, N. A., Caoimh, R. Ó., Clare, J., O'Connor, M., Leonard, M.,... & Timmons, S. (2013). Delirium in an adult acute hospital population: predictors, prevalence and detection. *BMJ open*, *3*(1).

Sackett, D.L., Haynes, R.B., & Tugwell, P. (1985). *Clinical Epidemiology: A Basic Science for Clinical Medicine.* Little, Brown and Company: Boston/Toronto.

Sandberg, O., Gustafson, Y., Brannstrom, B., & Bucht, G. (1999). Clinical Profile of Delirium in Older Patients. *JAGS, 47*(11), 1300-1306.

Sandhous, S., Zalon, M.L., Valenti, D., Dzielak, E., Smego, R.A., & Arzamosova, U. (2010). A volunteer-based Hospital Elder Life Program to reduce delirium. *Health Care Manager, 29*(2), 150-156.

Schofield, I. (1997). A small exploratory study of the reaction of older people to an episode of delirium. *Journal of Advanced Nursing*, *25*(5), 942-952.

Schor, J.D., Levkoff, S.E., Lipsitz, L.A., Reilly, C.H., Cleary, P.D., Rowe, J.W., & Evans, D.A. (1992). Risk Factors for Delirium in Hospitalized Elderly. *JAMA, 267*(6), 827-831.

Siddiqi, N., House, A.O., & Holmes, J.D. (2006). Occurrence and outcome of delirium in medical

      in-patients: a systematic literature review. *Age and Ageing, 35,* 350-364.

Siddiqi, N., Stockdale, R., Holmes, J., Britton, A.M. (2007). Interventions for preventing delirium

      in hospitalised patients. *Cochrane Database Systematic Review, 2,* 1-31.

Siddiqi, N., Young, J., House, A.O., Featherstone, I., Hopton, A., Martin, C., Edwards, J., Krishnan,

      R., Peacock, R., & Holt, R. (2011). Stop Delirium! A complex intervention to prevent

      delirium in care homes: a mixed-methods feasibility study. *Age and Ageing, 40,* 90-98.

Simon, L., Jewell, N., & Brokel, J. (1997). Management of acute delirium in hospitalized elderly: A

      process improvement project: Nurses and physicians working together are able to alleviate

      fluctuations in consciousness and motor activity by assessing, detecting, and treating

      delirious patients. *Geriatric Nursing*, *18*(4), 150-154.

Steckler, A., McLeroy, K.R., Goodman, R.M., Bird, S.T., & McCormick, L. (1992). Toward

      Integrating Qualitative and Quantitative Methods: An Introduction. *Health Education*

      Quarterly, 19(1), 1-8.

Tabet, N., & Howard, R. (2009). Non-pharmacological interventions in the prevention of delirium.

      Age and Ageing, 38, 374-379.

Tashakkori, A., & Teddlie, C. (Eds.). (2003). *Handbook of mixed methods in social & behavioral*

      research. Sage.

Taylor, D.W. (1983). The calculation of sample size and power in the planning of experiments.

      Hamilton, ON: McMaster University

Trzepacz, P. T., Baker, R. W., & Greenhouse, J. (1988). A symptom rating scale for delirium. *Psychiatry Research*, *23*(1), 89-97.

van der Mast, R.C. & Roest, F.H.J. (1996). Delirium after cardiac surgery: A critical review. *Journal of Psychosomatic Research, 41*(1), 13-30.

Wei, L.A., Fearing, M.A., Sternberg, E.J., & Inouye, S.K. (2008). The confusion assessment method: A systematic review of current usage. *J Am Geriatr Soc, 56*(5), 823-830.

Weiss, C. H. (1998). *Methods for studying programs and policies*. Upper Saddle River: Prentice Hall.

Williams, M. A., Ward, S. E., & Campbell, E. B. (1988). Confusion: testing versus observation. *Journal of Gerontological Nursing*, *14*(1), 25.

Wolock, I., Schlesinger, E., Dinerman, M., & Seaton, R. (1987). The posthospital needs and care of patients: implications for discharge planning. *Social work in health care*, *12*(4), 61-76.

World Health Organisation. (1992). *The ICD-10 classification of mental and behavioural disorders. Diagnostic criteria for research.* WHO, Geneva.

Yang, F.M., Marcantonio, E.R., & Inouye, S.K. (2009). Phenomenological subtypes of delirium in older persons: patterns, prevalence, and prognosis. *Psychosomatics, 50*(3), 248-254.

Young, J., & Inouye, S.K. (2007). Delirium in older people. *BMJ, 334,* 842-846.

Dear Family Member:

Please check the circle that best describes you or your family member.
Remember, your individual responses will not be shared with anyone.

1. I am the patient's?

◯ Spouse
◯ Daughter
◯ Son
◯ Niece
◯ Nephew
◯ Granddaughter
◯ Grandson
◯ Other Relative
◯ Friend

2. Did your family member/friend live with you prior to hospitalization?

◯ Yes
◯ No

3. Prior to their hospitalization, how many minutes did you spend travelling to visit your family member/friend's place of residence?

◯ Less than 15minutes
◯ 16 to 30 minutes
◯ 30 minutes to 1 hour
◯ Greater than 1 hour
◯ Not applicable, my family member lived with me

4. How many minutes travel time does it take you to visit your family member/friend here at Freeport?

◯ Less than 15minutes
◯ 16 to 30 minutes
◯ 30 minutes to 1 hour
◯ Greater than 1 hour

5. Prior to hospitalization, how frequently were you in contact with your family member/friend

a. in person?

◯ Less than once per week
◯ Once per week
◯ 1-3 times per week
◯ 4-6 times per week
◯ Daily
◯ More than once daily

b. by phone, email, or internet (e.g., Skype)?

◯ Less than once per week
◯ Once per week
◯ 1-3 times per week
◯ 4-6 times per week
◯ Daily
◯ More than once daily

In order to be sure we have survey responses from a variety of family members, we are asking you to provide some information about your background. Remember, your individual responses will not be shared with anyone.

6. I am:

◯ Male
◯ Female

7. How old are you? _____ years of age

8. Are you employed?

◯ Full time
◯ Part time
◯ Retired
◯ Homemaker
◯ Not employed at this time

9. How do you rate your overall health?

◯ Excellent   ◯ Good   ◯ Fair   ◯ Poor

Thank you for taking the time to complete this questionnaire! Your answers are greatly appreciated.

Please seal the completed questionnaire in the envelope provided and place it in the box on the Unit Secretary's Desk.

Participants Needed!

We would like to hear about your experience with the Hospital Elder Life Program (HELP)

We are looking for patients and family members to participate in a small group discussion about your experience with the HELP program here at Freeport. We are interested in receiving <u>your</u> feedback on the HELP program.

The discussion will be held from (*time & date*)

Food and refreshments will be served.

Participation is completely voluntary and will not

affect the services you receive now or in the future.

If you would like to take part in the discussion, please call:

Nancy Pearce at ext. 7491

From outside the hospital, Nancy can be reached by calling:

519-749-4300 x 7491
Or

Kelsey Huson at 226-750-0401

Grand River Hospital—Freeport Health Centre

This project has been reviewed through a University of Waterloo Research Ethics Committee and is being conducted by Grand River Hospital in conjunction with the School of Public Health and Health Systems at the University of Waterloo

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Participation is completely voluntary and will not

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APPENDIX E

Focus Group Letter of Information

You are to take part in a 45 minute group discussion with 5-11 other participants to discuss your experiences with the Hospital Elder Life Program (HELP) at Grand River Hospital – Freeport. This discussion is part of larger project examining the impact of the HELP program and includes an MSc student, Kelsey Huson, from the School of Public Health & Health Systems at the University of Waterloo.

Your participation is entirely voluntary and in no way will affect the services you now receive or may receive in the future. You may choose when, and if, to make comments during the discussion. You are free not to make any comments if you prefer.

We need the permission of all participants to audiotape the discussion group. The reason for audiotaping is so that we do not miss the valuable comments people make. Recording the discussion allows us to go back and look at the information more completely.

We ask that you respect the privacy of everyone here today. Please do not discuss any information that you may hear in this group after you leave.

All of the information you provide will be kept confidential. We will summarize the information from the discussion group here today, along with the information from additional discussions taking place to depict different views. Your name will not appear in any thesis, publication, or report resulting from this project. However, with your permission, your anonymous responses may be used. Data collected during this project will be retained for no more than five years on a password-protected computer database at the hospital. Only researchers associated with this project will have access. There are no known or anticipated risks to you as a participant in this study.

We would like to assure you that this project has been reviewed and received ethics clearance from the Office of Research Ethics at the University of Waterloo. If you have any comments or concerns resulting from your participation, please contact Dr. Maureen Nummelin, Director, Office of Research Ethics, at (519) 888-4567 Ext. 36005 or maureen.nummelin@uwaterloo.ca.

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

_____

I have had the opportunity to ask any questions related to this research project, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my participation in the focus group to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the focus group may be included in reports and/or publications to come from this initiative, **with the understanding that the quotations will be anonymous**.

I am aware that I am not to share any information disclosed during the discussion with anyone and that while the researchers promise to keep the information disclosed confidential, there is a chance that other participants may mention something that was said in confidence to other.

I was informed that I may withdraw my consent at any time without penalty by advising the facilitator.

This project has been reviewed through a University of Waterloo Research Ethics Committee.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this initiative.

☐YES   ☐NO

I agree to have my participation audio recorded.

☐YES   ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this enquiry.

☐YES   ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____ Date: _____

APPENDIX F

Focus Group Letter of Information

You are to take part in a 45 minute group discussion with 5-11 other participants to discuss your experiences with the Hospital Elder Life Program (HELP) at Grand River Hospital – Freeport. This discussion is part of larger project examining the impact of the HELP program and includes an MSc student, Kelsey Huson, from the School of Public Health & Health Systems at the University of Waterloo.

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With full knowledge of all foregoing, I agree, of my own free will, to participate in this initiative.

☐YES ☐NO

I agree to have my participation audio recorded.

☐YES ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this enquiry.

☐YES ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____ Date: _____

APPENDIX G

Focus Group Letter of Information

You are to take part in a 45 minute group discussion with 5-11 other participants to discuss your experiences with the Hospital Elder Life Program (HELP) at Grand River Hospital – Freeport. This discussion is part of larger project examining the impact of the HELP program and includes an MSc student, Kelsey Huson, from the School of Public Health & Health Systems at the University of Waterloo.

Your participation is entirely voluntary and in no way will affect your employment position. You may choose when, and if, to make comments during the discussion. You are free not to make any comments if you prefer.

We need the permission of all participants to audiotape the discussion group. The reason for audiotaping is so that we do not miss the valuable comments people make. Recording the discussion allows us to go back and look at the information more completely.

We ask that you respect the privacy of everyone here today. Please do not discuss any information that you may hear in this group after you leave.

All of the information you provide will be kept confidential. We will summarize the information from the discussion group here today, along with the information from additional discussions taking place to depict different views. Your name will not appear in any thesis, publication, or report resulting from this project. However, with your permission, your anonymous responses may be used. Data collected during this project will be retained for no more than five years on a password-protected computer database at the hospital. Only researchers associated with this project will have access. There are no known or anticipated risks to you as a participant in this study.

We would like to assure you that this project has been reviewed and received ethics clearance from the Office of Research Ethics at the University of Waterloo. If you have any comments or concerns resulting from your participation, please contact Dr. Maureen Nummelin, Director, Office of Research Ethics, at (519) 888-4567 Ext. 36005 or maureen.nummelin@uwaterloo.ca.

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

_____

I have had the opportunity to ask any questions related to this research project, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my participation in the focus group to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the focus group may be included in reports and/or publications to come from this initiative, **with the understanding that the quotations will be anonymous**.

I am aware that I am not to share any information disclosed during the discussion with anyone and that while the researchers promise to keep the information disclosed confidential, there is a chance that other participants may mention something that was said in confidence to other.

I was informed that I may withdraw my consent at any time without penalty by advising the facilitator.

This project has been reviewed through a University of Waterloo Research Ethics Committee.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this initiative.

☐YES   ☐NO

I agree to have my participation audio recorded.

☐YES   ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this enquiry.

☐YES ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____ Date: _____

APPENDIX H

Background Questionnaire

Question 1:

I am a:

◯ Patient at Grand River Hospital- Freeport

◯ Caregiver of a patient at Grand River Hospital- Freeport

      I am the patient's: ◯ spouse   ◯ child   ◯ other

◯ HELP Volunteer

◯ Grand River Hospital Staff Member

Question 2:

I am:

◯ Male   ◯ Female

Question 3:

Age_____

APPENDIX I

Introductions:
Good morning (or afternoon/evening). I'm *(Name of Facilitator)* and this is *(Name of recorder)*. I am *(explain who you and the recorder are and your research project)*. I would like to thank everyone for coming today.

The discussion should last around 45 minutes. We want to assure you that any comments you make will be kept strictly confidential. You should know that we are also conducting discussions with other (patients, caregivers, staff, and volunteers) about HELP. The information heard here today will be summarized along with the information from the other discussions taking place to depict different views. No individual participant will be identified.

I will be the moderator of the discussion. That means it is my job to keep the discussion focused on the issues of interest. *(Name of recorder)* will be making notes of the discussion as we go along. The note taking helps to guide us when we review the discussion.

Please, feel free to express your view at any time. However, you should also feel free not to make comments or join in the discussion should you prefer.

If everyone agrees, we will audiotape the discussion so that we do not miss any of the valuable comments that you make. The tapes allow us to go back and listen carefully to the discussion.

Before we go any further, we ask that each of you to sign a consent form. The cover page outlines what I have just told you – any information that you provide in the discussion will be kept strictly confidential. We ask also that anything you hear in the discussion today is not shared outside of the discussion. Please read this cover page now – you may take the cover page home with you should you have any questions or concerns after you leave today.

Give time to read the cover page

Please turn to the second page. The top part concerns your general consent to participate. If you agree to participate in the discussion, please fill this part out now and sign it.

The second part asks for permission to tape record the discussion. We will not do this unless everyone here today agrees.

We would also ask that you fill out a brief background questionnaire to gather a bit more information on all participants in order to provide an overall description of the people who participated here today, as well as in the other discussion groups being conducted.

Obtain consent and background questionnaire

Are there any questions?

Check to determine if everyone has agreed to audiotaping.

Tear off cover sheet and return.

Ground Rules
Before we begin we ask that you try and speak one at a time. Otherwise we may miss some valuable comments. Keep in mind that there are no right or wrong answers to the questions I am about to ask. We expect that you will have different opinions. Please feel free to share your point of view even if it differs from what others have said - all comments are valuable and we are interested in hearing from each of you.

Introduction: As you know, we are here to discuss your recent experiences with the Hospital Elder Life Program here at Freeport. We are interested in hearing about your experience and to get feedback on the care you received.

Icebreaker: Let's begin by going around the table and introducing ourselves and telling everyone briefly why you decided to take part in the group today?

Prompts for focus group:
Was this similar for everyone?
Did anyone have a different experience?
Does anyone have a different view?
Can (or does) anyone want to add to that?
How did that make you feel?

Focus Group Questions:

For Patients:

1. What did you like most about your stay at Freeport? Is there anything you did not like?

2. Do you feel that there was something in particular that helped to improve your rehabilitation process?

3. Did you like having the HELP volunteers visit you during your stay?

4. Do you feel that the volunteers received adequate training?

5. What could the volunteers have done differently?

6. What could the staff have done differently?

7. If you were to tell someone about the HELP program, what would you say to them?

8. Would you recommend HELP to friends and family?

9. Is there anything else that we should have talked about but have not?

For Caregivers:

1. When your family member first began HELP, what were your first impressions of the program?

2. Did you interact with the volunteers? If so, how would you describe this interaction?

3. Do you feel that the volunteers received adequate training?

4. What could the volunteers have done differently?

5. Did you interact with the staff? If so, how would describe this interaction?

6. What could the staff have done differently?

7. If you were to tell someone about the program, what would you say to them?

8. Was there any part of the HELP that you felt was the most beneficial to your family member?

8. If your family member ever returns to the hospital, would you recommend that they participate in HELP again?

9. Is there anything else we should have talked about but have not?

For Volunteers:

1. What attracted you to volunteer with the HELP program?

2. Do you feel that you received adequate training? If not, what can be done better?

3. Do you feel that the time commitment (min. 4 hours per week) is appropriate? Is it too much?

4. How did the Elder Life Specialist assist you in your volunteer role? Was this assistance helpful?

5. Did you interact with staff? If so, how would you describe that interaction?

6. If you were to tell someone about this program, what would you say to them?

7. Are there any components of the HELP that you feel are the most effective?

8. What do you feel that you have you gained and/or learned as a volunteer with HELP?

9. Would you recommend a friend to volunteer with this program?

10. Would you recommend a family member to receive this program?

For Staff:

1. Has the presence of the HELP volunteers affected your routine care of patients?

2. Do you interact with the Elder Life Specialist? If so, how would you describe this interaction?

3. Do you interact with the HELP volunteers? If so, how would you describe this interaction?

4. Do you feel that the HELP volunteers have received adequate training?

5. Do you believe that the patients have benefited from HELP? How so?

6. Are there any components of the HELP that you feel are the most effective?

7. What could be done differently to improve the program?

8. Do you feel that it is feasible to sustain HELP at Freeport?

9. Would you recommend a family member to receive this program?

Summary:

If there are no further comments I would like to summarize some of the main points raised today.

Give a brief summary (2-3 minutes) of the main points raised in the discussion.

Do you agree that these are the main points that came out of today's discussion? Is there anything else that you would like to add?

Conclusion:

We would like to thank you for your participation in this discussion group. The information will help to improve the quality of care provided here at Freeport, and potentially for hospitalized older adults in the greater society.

Hand out thank you letter

APPENDIX J

Date

I would like to thank you for your participation in this discussion group. As a reminder, the purpose of this discussion was to talk about your recent experiences with the Hospital Elder Life Program here at Freeport.

The information collected during this discussion will contribute to a better understanding of the impact of the Hospital Elder Life Program here at Freeport, and will help to further improve services.

Please remember that any data pertaining to you as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, I plan on sharing this information with the staff and management at Grand River Hospital, as well as the research community through conferences and journal articles.

If you are interested in receiving more information regarding the results of this project, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by May 1, 2015, I will send you the information. In the meantime, if you have any questions, please do not hesitate to contact either myself or the manager on your unit.

This project has taken place with the help of an MSc student from the University of Waterloo. As with all University of Waterloo projects involving human participants, this project was reviewed through a University of Waterloo Research Ethics Committee. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Maureen Nummelin, Director, Office of Research Ethics, at (519) 888-4567 Ext. 36005 or maureen.nummelin@uwaterloo.ca.

 Sincerely,

Kelsey Huson, BA
MSc Candidate
School of Public Health & Health Systems
University of Waterloo

Participants Needed!

We would like to hear about your experience with the Hospital Elder Life Program (HELP)

We are looking for staff members to participate in a brief interview about your experience with the HELP program here at Freeport. We are interested in receiving <u>your</u> feedback on the HELP program.

Participation is completely voluntary and will not

affect your employment position now or in the future.

If you would like to take part in the research study, please call:

Nancy Pearce at ext. 7491

From outside the hospital, Nancy can be reached by calling:

519-749-4300 x 7491
Or

Kelsey Huson at 226-750-0401

Grand River Hospital—Freeport Health Centre

This project has been reviewed through a University of Waterloo Research Ethics Committee and is being conducted by Grand River Hospital in conjunction with the School of Public Health and Health Systems at the University of Waterloo

APPENDIX L

Interview Letter of Information

You are to take part in a 30 minute one-on-one interview to discuss your experiences with the Hospital Elder Life Program (HELP) at Grand River Hospital – Freeport. This discussion is part of larger project examining the impact of the HELP program and includes an MSc student, Kelsey Huson, from the School of Public Health & Health Systems at the University of Waterloo.

Your participation is entirely voluntary and in no way will affect your employment position now, or in the future. You may choose if you would like to make any comments during the interview. You are free not to make any comments if you prefer.

I do need your written permission to audiotape the interview. The reason for audiotaping is so that I do not miss any of the valuable comments made. Recording the discussion allows me to go back and look at the information more completely.

All of the information you provide will be kept confidential. I will summarize the information from the interview here today, along with the information from additional discussions taking place to depict different views. Your name will not appear in any thesis, publication, or report resulting from this project. However, with your permission, your anonymous responses may be used. Data collected during this project will be retained for no more than five years on a password-protected computer database at the hospital. Only researchers associated with this project will have access. There are no known or anticipated risks to you as a participant in this study.

I would like to assure you that this project has been reviewed and received ethics clearance from the Office of Research Ethics at the University of Waterloo. If you have any comments or concerns resulting from your participation, please contact Dr. Maureen Nummelin, Director, Office of Research Ethics, at (519) 888-4567 Ext. 36005 or maureen.nummelin@uwaterloo.ca.

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

_____

I have had the opportunity to ask any questions related to this research project, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my participation in the interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in reports and/or publications to come from this initiative, **with the understanding that the quotations will be anonymous**.

I was informed that I may withdraw my consent at any time without penalty by advising the facilitator.

This project has been reviewed through a University of Waterloo Research Ethics Committee.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this initiative.

☐YES   ☐NO

I agree to have my participation audio recorded.

☐YES   ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this enquiry.

☐YES ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____ Date: _____

APPENDIX M

Introduction:

Good morning (or afternoon/evening). My name is Kelsey Huson and I am currently an MSc student in the Health Studies and Gerontology program at the University of Waterloo. First, I would like to thank you for coming today.

The interview should last around 30 minutes. I would like to assure you that any comments you make will be kept strictly confidential. You should know that I am also conducting interviews with other staff members on unit UT4, as well as focus groups with nursing staff, volunteers, and patients and their caregivers. The information gathered here today will be summarized along with the information from the other discussions taking place to depict different views. No individual participant will be identified. Please, feel free to express any views that you may have. However, you should also feel free not to make any comment or answer any question should you prefer.

If you agree, the interview will be audiotaped so that I do not miss any of the valuable comments that you make. The tapes will allow me to go back and listen carefully to this discussion.

Before we go any further, I ask that you sign a consent form. The cover page outlines what I have just told you – any information that you provide in the interview will be kept strictly confidential. Please read this cover page now – you may take the cover page home with you should you have any questions or concerns after you leave today.

Give time to read the cover page

Please turn to the second page. The top part concerns your general consent to participate. If you agree to participate in the discussion, please fill this part out now and sign it.

The second part asks for permission to tape record the discussion. We will not do this unless everyone here today agrees.

I would also ask that you fill out a brief background questionnaire to gather a bit more information in order to provide an overall description of all participants in this study.

Obtain consent and background questionnaire

Do you have any questions?

Tear off cover sheet and return.

Introduction: As you know, we are here to discuss your recent experiences with the Hospital Elder Life Program here at Freeport.

1. How has the implementation of HELP affected your daily work regime at Freeport?
   Has it had a positive impact? Has it had a negative impact?

2. Do you interact with the HELP volunteers?
   If so, how would you describe this interaction? If not, why do you think this is?

3. Do you feel that the HELP volunteers have received adequate training?
   Is there anything specific that you can recall?

4. Do you believe that the patients have benefited from HELP?
   If so, how? If not, why do you think this is?

5. Is there any component(s) of HELP that you think is most effective? Why?
   Does this component benefit patients? Caregivers? Staff? Volunteers?

6. What could be done differently to improve the program?
   Who do you think might help to make this happen?

7. Do you feel that it is feasible to sustain HELP at Freeport?
   Do you feel that HELP is worth maintaining in rehabilitation settings? Why? Why not?

8. Would you recommend a family member to receive this program?
   Why? Why not?

Conclusion:

I would like to thank you again for taking the time to participate in this interview today. The information you have provided will help to improve the quality of care delivered here at Freeport, and potentially for hospitalized older adults in the greater society.

Hand out thank you letter

APPENDIX N

Date

I would like to thank you for taking the time to participate in this interview. As a reminder, the purpose of this interview was to talk about your recent experiences with the Hospital Elder Life Program here at Freeport.

The information collected during this interview will contribute to a better understanding of the impact of the Hospital Elder Life Program here at Freeport, and will help to further improve services.

Please remember that any data pertaining to you as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, I plan on sharing this information with the staff and management at Grand River Hospital, as well as the research community through conferences and journal articles.

If you are interested in receiving more information regarding the results of this project, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by May 1, 2015, I will send you the information. In the meantime, if you have any questions, please do not hesitate to contact either myself or the manager on your unit.

This project has taken place with the help of an MSc student from the University of Waterloo. As with all University of Waterloo projects involving human participants, this project was reviewed through a University of Waterloo Research Ethics Committee. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Maureen Nummelin, Director, Office of Research Ethics, at (519) 888-4567 Ext. 36005 or maureen.nummelin@uwaterloo.ca.

 Sincerely,

Kelsey Huson, BA
MSc Candidate
School of Public Health & Health Systems
University of Waterloo