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MEDICATION MANAGEMENT AMONG SOCIALLY ISOLATED OLDER ADULTS: A QUALITATIVE DESCRIPTIVE STUDY

BY

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In partial fulfillment of the requirements for the degree of

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Dedication

This thesis is dedicated to the older adults in my life, in my family as I was growing up. For not understanding the challenges you have endured, and all that you have taught me, making me a better nurse.

Acknowledgement

I first acknowledge my mom and dad in supporting my education. They have always pushed me to pursue post-secondary education so that I may forge a rewarding career and become an independent and educated woman. I thank my twin sister for spending countless hours revising my papers throughout my graduate studies. I thank my husband for supporting me in every way to pursue my goal of attaining a master's degree in the field of nursing. I thank my daughter for pushing me to complete my thesis.

I acknowledge the employees, mentors, and leaders I have worked with over the years that have helped me develop my skills as a registered nurse; and guided me to pursue advanced nursing practice so that I may contribute to positive changes in the health care system. I have been blessed with the opportunities to work with talented and knowledgeable people whom I have looked up to. These experiences have provided me with the confidence to continue my studies while advancing my career as a registered nurse in a leadership position. They have helped to foster my passion for community and population health.

Lastly, I thank my professors at Athabasca University who supported my graduate studies. I especially thank my thesis supervisor Dr. Annette Lane who took such a genuine interest in the success of my thesis, and worked with me so that I may meet the requirements of graduate studies while expressing my personal vision for my research.

Abstract

Social isolation results in poorer health outcomes and influences medication management in older adults. Although social support is emphasized as an intervention to support medication management among older adults, there is an absence of research that explores medication management when social support is lacking. In this thesis, I firstly highlight key findings of existing research reviewing the link between medication management and social isolation among older adults. A qualitative descriptive approach was used to explore experiences of medication management among five socially isolated, community-dwelling older adults. Themes were compiled and included: complexity of managing medications, variations in how social relationships are conceptualized, experiences in managing healthcare resources, and personal health practices and beliefs. Findings support the notion that experiences are complex, and influenced by healthcare resources, personal practices, and beliefs. Older adults should be encouraged to work collaboratively with healthcare providers to mitigate challenges of medication management when socially isolated.

Keywords: medication management, social isolation, community-dwelling older adults, qualitative description research

Preface

The impetus for this research originates from my experience as a community health nurse working with the older adult population. Throughout my graduate studies my research focused on the health of older adults, and the barriers they encounter while living independently in community. Throughout my career as a registered nurse, educator, and clinical resource nurse in community health my work has primarily been to support older adults to remain at home for as long as possible with the necessary support. There are many individual, social, and environmental characteristics that can hinder or support the ability of older adults to remain at home. Secondly my experience has shown me this also relies heavily on a collaborative, multidisciplinary approach from healthcare staff both within acute and community settings.

My passion, career goals, and educational goals revolve around furthering my education, knowledge development, and evidence-based research in this field of the older adult population in community health.

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Chapter 1. Introduction

Medication management is significantly problematic among socially isolated, community-dwelling older adults. To begin this thesis, I will describe some of my work experiences as a backdrop to my research. These case examples from my own practice as a community health nurse demonstrate the challenges socially isolated older adults experience. These experiences convinced me of the importance of understanding medication management among socially isolated older adults. This will be followed by a brief description of the challenges faced by these individuals, the findings of my literature review, and how my study addresses these issues.

Personal Reflections and Influences for Research

When I first began my career as a registered nurse I worked in acute care. As I worked my shifts in Burns and Plastics, and Medical and Surgical Intensive Care Units, I often wondered about the lives of my clients before they ended up in hospital; and what happened to my patients upon discharge home? A few years later I was working as a community health nurse (CHN) for Vancouver Coastal Health. Much of the client population I cared for were older adults who lived at home. I saw clients for palliative care, symptom management, chronic disease management, wound care, and medication management. While seeing clients for their primary concern, it was also essential to assess activities of daily living, instrumental activities of daily living, the living conditions, environment, and social support systems. These factors significantly influenced the ability of older adults to care for themselves, manage their wounds and chronic conditions, transport themselves to physicians' appointments, obtain prescriptions, and cognitively be able to follow medication directions, or contact a

physician when health challenges arose. My experiences as a CHN were my first realization of how complex health challenges really were, and the factors that influenced health besides genetics and individual practices.

One of my roles involved working for a team that focused on rapid follow up of older adults, 70 years and older, who were assessed and discharged from the emergency department. Many of these older adults had never been followed by community health clinicians before and were not connected to services. Many of these older adults also did not have any family or social support networks. While working on this team one of my primary roles was advocating for the needs of my clients: social, health, and environmental. Not only did I need to address health care concerns but also assess and liaise with other healthcare providers in the community, contact family members, and connect older adults to resources within the community. Medication management was a significant problem of many older adults whom I cared for. Older adults may have been treated in the emergency department for falls, or symptoms related to chronic disease; however, only upon closer assessment with the older adult within their home would concerns related to medication management and lack of support of caregivers or family be evident.

An older woman, who I will call Elizabeth[1] had fallen and was treated by suturing her in the emergency department. She was referred to our team for wound care. While assessing her wound within her home and completing my assessment, I realized that she was taking pain medications for an old fracture to her leg. Elizabeth was an older adult who lived alone and had no family or caregivers in the city. Her children had moved out of province. She was experiencing poor pain control while also taking her pain

[1] All client names within this thesis are pseudonyms with details about the individuals disguised.

medications incorrectly. Elizabeth was experiencing side effects from these pain medications: constipation, and dizziness. She was not aware of the side effects of constipation and was not prescribed any medications to assist with elimination. It took a few weeks with several visits to connect with Elizabeth's doctor regarding her medication and constipation, provide teaching to Elizabeth regarding her medications, as well as provide the wound care, and then discharge Elizabeth from service with more controlled pain and better knowledge of how to take her pain medications.

Another client, an older gentleman named Henry, was treated in the emergency department for hypoglycemia. The emergency room report stated he was a newly diagnosed type two diabetic and was started on insulin a few weeks previously. After meeting with Henry, I had learned that he had never married, did not have any children, and lived alone. Henry had very few friends; none who could help him to manage his diabetes. Henry also did not drive and relied heavily on public transportation. Upon being diagnosed with diabetes, Henry was started on short sliding scale acting insulin, and long acting insulin at bedtime. He also needed to monitor his blood glucose levels several times a day. This was very difficult for Henry to manage as he did not comprehend the complicated medication regimen and did not have the dexterity in his fingers to be comfortable with the insulin pen and blood glucose machine. After working with Henry, I referred him to a pharmacy outreach program as well as a diabetic teaching clinic and arranged transportation to assist him to get to his appointments. I also helped set him up with the local grocery store to shop for groceries by phone to ensure he was able to obtain healthy food.

Some cases in the community are particularly complex for multiple reasons. An older woman named Karen was referred to our team for medication management. Karen had a history of dementia, diabetes, and high blood pressure. Karen was treated in the emergency department for dizziness. Upon visiting Karen within her home and assessing her medications, it became evident that Karen was not taking her medications as prescribed. Karen lived alone, she had no family in the province, and her husband who also had dementia lived in a nursing home. Karen also did not consent to pharmacy outreach programs, and although she was confused on how to take her medications as prescribed, she was still able to make her own decisions regarding her care. Regardless of reviewing the risks of taking her medications incorrectly, Karen still would not consent to giving up control of managing her medications. I worked with Karen for a week, visiting her every other day to review her medications, counting out pills and using a pill organizer to try to facilitate her taking them correctly. Karen did not believe she needed her blood pressure medication, and selectively took the pills when she felt her blood pressure was high; not daily as prescribed. Regardless of the attempt to support Karen, she was admitted to hospital.

These are just three examples of the many older adults living within our communities who struggle with managing health conditions and medications who have no social support of family or caregivers. Many challenges that Elizabeth, Henry, and Karen experienced within their home environment were not evident upon their assessment in the emergency department. The realities of their situations were only clear upon assessment within their own homes where environmental and social factors impeding managing heath and medications could be assessed. Furthermore, assessing

medication regimens is far more effective within the home as healthcare providers can assess where medications are kept, how they are being taken, or if they are being taken at all (Marek et al., 2013; Mc Gillicuddy et al., 2019).

Setting the Stage

The Canadian Medical Association (2016) emphasizes that our healthcare system is not equipped to deal with the increasing population of older adults and level of care they require. Healthcare systems need to focus on improving the care provided to older adults and reducing the level of dependency of older adults on the system. For many older adults, this is indicative of supporting them to remain within their homes with appropriate access to the required services. To identify appropriate services, healthcare providers must first understand the challenges and barriers older adults' experience. Chronic disease and illness are some of the most significant challenges older adults encounter both of which often require medications (Gellad et al., 2011; Maloney & Kagan, 2011; O'Quin et al., 2015).

Various factors influence the ability of older adults to manage medications effectively and appropriately: polypharmacy; adverse reactions; drug interactions; decreased physical functioning including decreased mobility; decreased metabolism of medication which can lead to delirium; cognitive decline (e.g., mild cognitive impairment or dementia) which can influence how to take medications correctly; and lack of knowledge of purpose of the medication. The Canadian Institute for Health Information (CIHI) (2014) and the International Federation on Aging (IFA) (2012) report that these challenges result in decreased health outcomes and increased use of healthcare

services. Older adults require support of caregivers, family, and healthcare providers to assist with the challenges experienced with managing medications.

Current research describes medication management in older adults ***or*** social isolation in aging. Remedies for medication management often include social support. However, available studies do not demonstrate how social isolation among older adults impacts medication management. From my clinical experiences working with socially isolated older adults as well as those well documented in the literature, challenges associated with medication management include: opening pill bottles, following specific medication instructions, titrating medications, accessing prescriptions, and understanding when adverse effects require intervention from a healthcare professional (Longman et al., 2012; Maloney & Kagan, 2011; Marek et al., 2013; Nicholson, 2012). I provide an in-depth discussion of literature addressing medication management and social isolation in Chapter 2, however a few key points are mentioned here.

Background and Statement of the Problem

Existing research does not sufficiently explore the lived experiences of medication management among older adults who live alone and lack social support. Among the many factors influencing the ability of older adults to manage their medications are their personal support systems such as family, friends, or caregivers (Gellad et al., 2011; Maloney & Kagan, 2011; Marcum & Gellard, 2012; Miller & DiMatteao, 2013). Older adults who live alone were found to be more prone to medication errors than those who did not live alone (Longman et al., 2012; Nicholson, 2012; Valtorta & Hanratty, 2018). In fact, social isolation increases the risk of

hospitalization four to five times more than older adults who have established social support (Government of Canada, 2014).

The question that remains is how do older adults who live alone and lack social supports manage their medications? There is insufficient research examining the challenges socially isolated older adults experience when attempting to manage their medications, as well as the relevance of these experiences in relation to these two concepts is not well understood. A review of the literature explains what is known about medication management and social isolation among older adults and demonstrates the lack of research exploring medication management among socially isolated, community-dwelling older adults.

Research on aging has a tradition of focusing on the many challenges associated with chronic disease, physical and cognitive functioning, illness, resources, and medication use (CIHI, 2016; Marek et al., 2013). Two particular challenges associated with aging which have been explored independently include medication management and social isolation. Theoretical frameworks such as the Social Ecology Model of Health (SEMH) validate how multiple factors react concurrently to influence health outcomes (Ayalon & Levkovich, 2017; Golden & Earp, 2012). (The SEMH will be discussed in Chapter 3). Individual, environmental, and social characteristics all affect an individual's health status and specific health practices such as medication management. The IFA Aging (2012) contends that there is a complex relationship between these concepts specifically linked to poor health outcomes and decreased quality of life in older adults who live alone. The support of family, friends, and neighbors can assist with tasks

associated with managing medications, however; little is understood of how this task is accomplished when social supports are absent.

Purpose and Research Question

Before you can design research to study *why* a phenomenon happens and then develop interventions, you need to understand *how*, *when* and *where it* happens. Given there is limited scientific information, the purpose of the study was to describe and understand the experiences of socially isolated, community-dwelling older adults when managing their medications. The sole research question was: what are the experiences of medication management among socially isolated, community-dwelling older adults. The study was conducted as a partial requirement for the Master of Nursing degree at Athabasca University.

Definition of Terms

Community-dwelling refers to living independently within one's own home, not within a facility such as long-term care, assisted-living, a senior's community, or acute or clinical settings (Longman et al., 2012; Mc Gillicuddy et al., 2019). Although the age of older adults varies in the literature, for this study older adult refers to those approximately aged 65 years and older (Gellad et al., 2011; Government of Canada, 2014; Maloney & Kagan, 2011). The concept of medication management refers to the ability to follow medication regimens, adhere to drug schedules, and manage adverse effects (Gellad et al., 2011; Holt et al., 2013).

Social isolation refers to an objective measure of social networks, connections, interactions, and relationships (Ayalon & Levkovich, 2019; Cornwell & Waite, 2009; Dickens et al., 2011; Umberson et al., 2010). It is important to differentiate between

social isolation and loneliness. In this study, I did not focus on loneliness which refers to subjective feelings of being alone (Dickens et al., 2011; Umberson et al., 2010). Furthermore, loneliness and social isolation may or may not be related, and one can occur in the absence of the other.

Significance and Summary

In order to fill a gap in the literature, as well as address a significant concern about medication management among socially isolated older adults, researchers must first understand the authentic experiences of medication management within social isolation as relayed by the older adults experiencing them to implement successful interventions targeting potential challenges. As a CHN, I have witnessed how older adults are discharged home from hospital and return to the same environment that contributed to poor health outcomes. Community-dwelling older adults experience multiple health challenges that require a multidisciplinary and collaborative approach to resolve. Both poor medication management and lack of social support are challenges that contribute to significant health concerns. Although much research is required to understand if a relationship between these challenges exists, understanding the experiences of older adults who live alone in the community is the first step to addressing these challenges. It is also a necessary action to increase awareness of healthcare providers in all healthcare settings. The findings from this research will provide foundational knowledge required to understand medication management in socially isolated older adults.

Chapter 2. Review of the Literature

A literature review was conducted to understand existing research examining medication management experiences among socially isolated, community-dwelling older adults. The search terms used included: community-dwelling older adults, medication management, and social isolation, separated by the word “and”.

Search Strategy

Search terms were entered into Medline, CINAHL, Google Scholar, and PubMed databases. Literature that was published between the years 2010- 2019 was included to best represent current research examining medication management among socially isolated, community-dwelling older adults. Literature that discussed or highlighted: social isolation, decreased social support systems, medication management practices or barriers to managing medications in older adults living alone were included in the literature review.

The search resulted in 24 qualitative and mixed method research studies: 13 studies discussed medication management among older adults, and 11 studies examined social isolation among community-dwelling older adults. Four of the studies highlighted the benefits of social networks in assisting older adults to manage their medication regimens to handle chronic disease (Cornwell & Waite, 2009; Maloney & Kagan, 2011; Miller & DiMattea, 2013; Wu et al., 2013). The search did not result in any articles that explored how older adults who are socially isolated manage their medications.

Overview and Themes

After analyzing research that discussed both medication management and social isolation among community-dwelling older adults, several congruent themes were

identified. Primary themes included: barriers to medication management; the role of caregivers in medication management; and healthcare utilization as a result of poorly managed medications. Another prevalent theme in the literature review was the reference to the use of social supports to assist older adults in managing their medications.

Barriers to Medication Management

A review of oncology research reports and clinical reviews determined that limited financial resources and transportation, polypharmacy, and decreases in physical and cognitive functioning all impinged upon medication compliance in older adults (Maloney & Kagan, 2011). These authors also reported that unmarried older adults were more likely to report non-adherence to medication than married older adults. Not only were social supports emphasized as key interventions in medication management in older adults, but findings also affirm that lack of social support affects medication use. Maloney and Kagan (2011) suggested incorporating social supports for older adults to organize medications, provide transportation to appointments, monitor adverse effects, and assist with financial barriers associated with cancer treatment. Ultimately informal supports bridge the gaps of physical and cognitive decline associated with aging, and support tasks required to manage medications. The analysis provided rich detail surrounding the key role of social supports in managing medication regimens for cancer treatment.

A randomized clinical trial that investigated self-management practices of community-dwelling older adults suggested the use of home-based monitoring to assess individual barriers. Marek et al. (2013) identify cognitive impairment as a barrier affecting the ability of older adults to manage medications, and that older adults often

count on family members to remind them when medications are due. Furthermore, barriers in physical functioning and mobility may affect being able to open pill bottles and read medication labels. In examining care-coordination and home- based monitoring, the clinical trial demonstrated that social environments can reduce the ability of older adults to self-manage their medications. This research acknowledges that lack of social support has the potential to impede the ability of older adults in self-managing medications.

Canadian research reports that 20% of hospitalized older adults suffer adverse events when discharged from hospital, and more than 60% of those events are related to poor medication management (Godfrey et al., 2013). These challenges are related to being unable to afford medication, stopping medications or never filling prescriptions, encountering physical barriers in getting to the pharmacy or medical appointments, and an inability to make decisions surrounding adverse medication events. After conducting a scoping review, Godfrey et al. (2013) state that collaboration between healthcare providers, family, and friends plays a meaningful role in decision making about medication use and supporting medication compliance in community-dwelling older adults. Caregivers and families help communicate the individual needs of the older adults. The scoping review advocates for interventions that incorporate improved screening and monitoring of behavioral and social challenges that influence medication use within the home. This is another study that advocates for the role of social support in medication management in the home environment of older adults but did not examine how socially isolated older adults attempted to manage their medications.

Role of Caregivers in Medication Management

A qualitative study consisting of semi-structured interviews in Ireland examined the knowledge of caregivers and community dwelling-older adults in following medication instructions. Tasks such as: crushing pills, adhering to food and drug contraindications, administering correct doses, and titrating medications were all specific tasks that older adults struggled with at home (Mc Gillicuddy et al., 2019). The results of this study are essential for healthcare providers and caregivers of older adults in identifying specific medication tasks that may be affected by physical and cognitive decline. Through increasing awareness of the barriers to following medication regimen tasks, healthcare providers can assess individuals' social support networks that may inhibit or support these tasks. However, the findings also accentuate that healthcare providers need to assess for the implications of the lack of social supports in home environments with these specific medication tasks.

Similar to medication regimens in cancer treatment (Maloney & Kagan, 2011), managing chronic disease also requires following complex medication regimens. Family members or caregivers can assist in following medication regimens, following medication instructions, and assisting clients to medical appointments and to pick up prescriptions. Treatment of diabetes and heart failure requires monitoring and responding to changes in symptoms, following complex medication schedules, and accommodating for fluctuations in physical health status with exacerbations or poorly controlled blood sugars. Social support is noted to improve medication adherence through physical support, but social supports also provide emotional support to assist the older adult in adjusting with the illness (Miller & DiMatteo, 2013; Wu et al., 2013).

A secondary analysis of two longitudinal studies examined medication adherence in treatment of diabetes. The analysis determined that tasks such as keeping medical appointments, refilling prescriptions, and receiving assistance in administering medications was highly influenced by social support. Another secondary analysis of medication management in heart failure highlights types of social support: structural such as marital status and living arrangements; and functional support in practical, instrumental, and emotional needs (Wu et al., 2013). These results indicated that improved functional support allowed older adults who lived alone to better manage their heart failure, which resulted in fewer hospitalizations. As seen in previous research (Godfrey et al., 2013; Maloney & Kagan, 2011; Marek et al., 2013), functional support in the practical and instrumental tasks of medication management such as following regimens, getting to the pharmacy, and opening bottles are simple tasks that are impeded greatly by physical and cognitive decline in aging.

Healthcare Utilization due to Poor Medication Management

In an effort to decrease hospitalizations in older adults related to poor medication adherence, O'Quin and colleagues (2015) examined the perceived barriers of community-dwelling older adults through nine focus groups. It was determined that medication side effects, cognitive and physical decline, complex medication regimens, low socioeconomic status, and low health literacy all contributed to poor medication adherence. It was also discovered that even the smallest change to a medication regimen could result in poor compliance and ultimately lead to hospitalization. Proposed interventions to decrease these barriers included the involvement of community resources and social support. Increased involvement from family, friends, and neighbors was

required to assist with medication reminders throughout the day. One of the implications of the research was to improve supports outside the clinical setting and to encourage personal systems to assist older adults with medication management (O'Quin et al., 2015). Research such as this is important in demonstrating how lack of social supports can be detrimental to successful medication management in older adults; however, it does not address the larger challenge of what older adults who lack these social supports do to manage.

To summarize studies examining medication management in older adults, poor medication management among older adults has been linked to increased healthcare utilization. Drug interactions, poorly managed medications, delirium, medication associated falls, polypharmacy, and changes in physical functioning and physiology have all been linked with hospital admissions of older adults (Davies & O'Mahony, 2015; Huang et al., 2012). A study determined that social support can improve medication compliance in chronic disease management such as diabetes by 37-51% (Bustamante et al., 2018). Specifically, social support can assist with medication activities such as organizing and tracking medications, monitoring adverse reactions, overseeing polypharmacy, and making treatment decisions (Look & Stone, 2018; Noureldin & Plake, 2016). Challenges associated with any of these factors can result in poor medication management and ultimately lead to negative health outcomes and hospital admissions. Both individual barriers in physical and cognitive functioning and social supports of older adults need to be assessed to decrease poor health outcomes and hospitalization related to medication management (Davies & O'Mahony, 2015; Huang et

al., 2012; Marcum & Gellard, 2012). Only then can medication management strategies be modified to suit individual needs.

Social Isolation among Community-Dwelling Older Adults

Social isolation refers to the objective measure of social networks, interactions, and relationships (Abedini et al., 2019; Government of British Columbia, 2014). Social isolation is heavily associated with poor health outcomes including higher rates of chronic disease, depression, cognitive decline, and increased mortality (Flowers & Miller, 2018; Government of Canada, 2014; Shankar et al., 2011; Valtorta & Hanratty, 2012). Furthermore, older adults are at increased risk of experiencing social isolation from death of a spouse or friends, geographical relocation of family, barriers to transportation, decreases in cognitive and physical functioning, and an increase in single person households. Social isolation among older adults also correlates with a decrease in physical and mental health such as anxiety, depression, increase in chronic disease, and an increase in hospital admissions (Dickens et al., 2011). The impact of social isolation on the health of older adults emphasizes that healthcare providers, communities, and policymakers need to address this challenge.

Social Supports in Medication Management

In a qualitative study, semi-structured interviews were used to examine the effects of social isolation and avoidable hospitalizations in an Australian rural community (Longman et al., 2012). Understanding the perspectives of patients and caregivers determined that living alone and lack of social support correlated with increases in emotional stress, anxiety, difficulty in managing symptoms of chronic disease, poor health behaviors, and increased unplanned hospital admissions (Longman et al., 2012).

The results of the study demonstrated the need for the involvement of family and friends in care of older adults to support positive health practices and behaviors. Older adults with cognitive impairment were at even more risk of poor medication compliance (Longman et al., 2012; Valtorta & Hanratty, 2018). Although this study did not examine *how* social isolation affects specific health practices such as medication management, social support improves positive reinforcement and monitoring of medication use in older adults who may not remember dosing or schedules.

A review of social isolation in older adults indicates that isolation plays a significant role in the success or failure of treatments and medications (Nicholson, 2012). Interventions that incorporated social supports to influence health behavior in older adults generated minimal cost and maximum results in reducing hospital admissions and negative health outcomes. Nicholson (2012) highlights the fundamental role of healthcare providers who work with older adults dwelling in the community in identifying those at risk of social isolation. Indicators of social isolation are older adults that have approximately less than monthly contact in the form of face-to-face contact or phone calls with family or friends (Shankar et al., 2011).

Throughout the last decade, research has advocated for closer inspection of the risks associated with social isolation and subsequent health outcomes of older adults (Boeckxstaen & Graff, 2012; Longman et al., 2012; Nicholson, 2012; Valtrota & Hanraty, 2012; Wu et al., 2013). A meta-analysis confirmed that individuals with greater social supports experience 50% improved health outcomes when living with chronic disease (Valtrota & Hanraty, 2012). Social networks assist older adults in overcoming physical and cognitive barriers associated with aging (Holt-Lunstad et al., 2015; Holt-

Lunstad et al., 2010). Results from this meta-analysis improve awareness among healthcare providers and families that social support is critical in ensuring older adults can remain at home. Interventions to target negative influences of social isolation included a multidisciplinary approach, assessment of support networks, and addressing individual needs of older adults within their home environments. It is evident from this that in addition to individual and environmental characteristics that affect the health of community-dwelling older adults, social support also needs to be assessed as an intervention or barrier to managing health practices such as medication management.

Gaps in the Literature

Studies examining challenges of medication use among older adults highlight the role of social support to assist with management but *do not specifically* examine how socially isolated, community-dwelling older adults manage their medications (Bustamante et al., 2018; Godfey et al., 2013; Maloney & Kagan, 2011; Marek et al., 20113; McGillicuddy, et al., 2019; Miller & DiMattea, 2013; O'Quin et al., 2015; Wu et al., 2013). Unmarried older adults are also more likely to experience non-adherence to medications than older adults who do not live alone as supportive relationships can assist with tasks such as: organizing medications, providing transportation, and monitoring side effects. Research also highlights that collaboration between healthcare providers, family and friends are essential in medication compliance among community-dwelling older adults, however, do not offer any suggestions for older adults that lack social supports (Flowers & Miller, 2018; Godfrey et al., 2013; Longman et al., 2012; McGillicuddy et al., 2019; Miller & DiMatteo, 2013; Shankar, et al., 2011; Valtorta & Hanratty, 2012). Lastly, none of the research reviewed offered any suggestions in how healthcare

providers can assess social supports of older adults and areas where older adults may need assistance to manage medications. Although the goal of this study was to understand the experiences of social isolation and medication management and not to develop interventions for healthcare providers to assess social supports of older adults, the research will help to design further studies focused on developing interventions.

Summary

The use of social supports to assist community-dwelling older adults in managing their medications is highlighted as an important intervention. Future research should examine the experiences of socially isolated older adults in managing, or attempting to manage, their medications. This approach is in line with the Government of British Columbia (2014) which states that future research should focus on increasing community awareness of how social isolation influences the health of older adults and healthcare utilization. The aim of the proposed study is to examine the experiences of medication management among socially isolated, community-dwelling older adults, thus addressing a gap in the literature. As will be demonstrated in the next chapter, the SEMH is a conceptual framework that will inform this study, and then as described in Chapter 4, a qualitative descriptive approach supports understanding unique individual experiences through accurate descriptions.

Chapter 3. Conceptual Framework

Overview

In this chapter, I discuss the general principles of the conceptual framework that informs this study, and how this conceptual framework supported the development the study. I review how the conceptual framework supported various aspects of the research study such as the development of inclusion and exclusion criteria for the participants. The conceptual framework also supported the development of interview questions to assess social supports and social isolation.

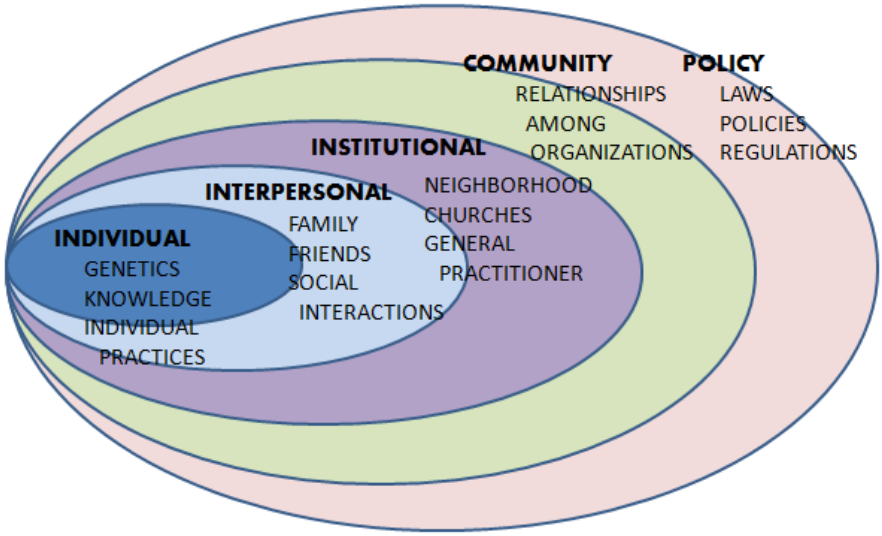
Social Ecological Model of Health (SEMH)

Social ecological conceptual models have been widely used among fields such as public health, sociology, and psychology to explain how the health of individuals is influenced by larger social systems (Golden & Earp, 2012; Kilanowski, 2017; Richard et al., 2011; Tannenbaum et al., 2017; Umberson et al., 2010; Wold & Mittelmark, 2018). Socio-ecological models were first introduced by Urie Bronfenbrenner in the 1970s to help understand human development (Kilanowski, 2017). The model was further developed by McLeroy (Richard et al., 2011). In the SEMH, the first level of influence to individual health pertains to genetics, knowledge, and health practices. Although individual characteristics have a significant influence in overall health there are factors beyond individual characteristics such as social, community, and policy that also significantly influence health (Kilanowski, 2017; Wold & Mittelmark, 2018). The next most significant influence of health closest to the individual is interpersonal or social interactions such as direct contact with friends, family, and social networks. The third level of the SEMH, referred to as institutional, includes organizational influences such as

co-workers, neighborhoods, schools, and churches (Wold & Mittelmark, 2018). The fourth level pertains to community which is the relationships between organizations; and the last level furthest from the individual pertains to public policies, laws, and regulations. Figure 1 shows the SEMH adapted for the study.

Figure 1.

Social Ecology Model of Health Adapted for the Study



The ability of community-dwelling older adults to remain at home is dependent on their level of physical and cognitive functioning and, according to Greenfield (2011), relies heavily on informal supports from family and friends. Using this conceptual model supports recognition that the health of individuals is fixed within a larger social system and influenced by larger physical and social environments. The SEMH provides a foundation for understanding the interactions between individual needs, social supports, and community (Ayalon & Levkovich, 2017; Golden & Earp, 2012). Furthermore, after identifying the level of influence affecting health outcomes, we are then able to identify

the level of intervention required to resolve negative health outcomes. When addressing health challenges healthcare providers also need to address these other influences on health outside of the individual.

Use of Conceptual Models in Qualitative Descriptive Research

Qualitative descriptive research aims to understand lived experiences among a group of individuals who have all experienced the same phenomenon (Ang et al., 2018; Lambert & Lambert, 2012; Nyvang et al., 2016). A differentiating factor of qualitative descriptive research is that it does not rely on a theory or framework to represent data (Kim et al., 2017). Lambert and Lambert (2012) also highlight this feature of qualitative descriptive research in that it does not require the researcher to formulate an abstract representation of data through manipulation to commit to a specific conceptual framework. Although theories and conceptual models help guide the research process in data interpretation and validating findings, qualitative descriptive research cautions against using a framework (Sandelowski, 2000; Wills et al., 2016). This caution is because researchers may alter data to conform to the framework or philosophy. The SEMH framework supports that interpersonal factors such as social networks and community resources significantly influence the health of individuals: specifically, lack of social relationships and decreased community resources influence negative health outcomes. McGillicuddy et al, (2019) advocates for supportive social and community environments for positive health outcomes.

Use of Social Ecology Model of Health in the Research Study

The SEMH supported the inclusion and exclusion criteria of research participants through referencing the second and third levels of the framework: intrapersonal and

institutional. Older adults who experienced a lack of social relationships and supports of family and friends were a requirement for the study. Older adults who resided in facilities such as an assisted living facility were also excluded. The SEMH also supported the development of open-ended interview questions to assess the experiences of how social isolation influences medication management in community-dwelling older adults. The model supported questions addressing how lack of informal supports and relationships of family and friends may have affected or hindered individual health practices such as medication management. Reflecting on how the health of individuals is influenced by the physical and social environments supported how available resources within the community also influence an individual's health and health outcomes.

Summary

The SEMH is a conceptual framework that demonstrates the influence on individual, interpersonal, institutional, community, and policy factors on health outcomes. Although qualitative descriptive research does not require the study to conform to a conceptual framework, the SEMH did support the development of inclusion and exclusion criteria and interview questions to address interpersonal and institutional factors.

Chapter 4. Methods

Overview

This chapter provides a review of qualitative descriptive research. The research design for the study is also reviewed. Sampling, inclusion, and exclusion criteria for research participants are discussed; as well, the tools referenced to define the term social isolation for this study are cited. Participant recruitment, ethics, and data collection are also discussed. The details of how data collection was significantly influenced due to COVID-19, and the necessary changes to the details of the research study during participant recruitment and data collection are addressed. Lastly, data management and analysis (using thematic analysis) are discussed.

General Principles of Qualitative Descriptive Research

A qualitative descriptive research approach was chosen because it is often used in nursing research as it sticks close to the words of research participants to ensure that their perspectives are presented (Willis et al., 2016). It also explores phenomena not well researched. Knowledge is then derived from using the participants' own words to describe the meanings of those experiences. Qualitative descriptive research does not need to conform to a particular epistemological stance or theory such as other qualitative approaches like phenomenology (Lambert & Lambert, 2012; Kim et al., 2018; Sandelowski, 2000; Vaismoradi et al., 2013). In examining issues not well explored such as the experiences of social isolation and medication management among community-dwelling older adults, these general principles of the methodology make qualitative descriptive research an appropriate choice for the research study.

In order to understand how this study followed methods of qualitative descriptive research, I will outline sampling, data collection, and data analysis, prior to discussing my research design. There are three aspects to consider when choosing a study sample: participants, strategy, and sample size (Converse, 2012; Creswell & Poth, 2018). In qualitative descriptive research a purposeful sampling strategy ensures that participants have experienced the same phenomenon being studied, and the necessary data is obtained to answer the research question. Literature reviewing qualitative descriptive research do not provide an exact number for sample size, however, research that has employed the method suggest between 5 to 20 participants (Ang et al., 2018; Irani et al., 2018; Magilvy et al., 2009; Nyvang et al., 2016; Sandelowski, 2000).

Semi-structured interviews are an essential tool used in qualitative descriptive research to collect detailed data while allowing the researcher to ask required questions (Ang et al., 2018; Lambert & Lambert, 2012; Magilvy et al., 2009). An advantage of qualitative descriptive research is that the researcher can ask further questions based on the participants' responses (Ang et al., 2018; Lambert & Lambert, 2012; Magilvy et al., 2009; Sandelowski, 2000). Those questions can then be asked in subsequent interviews with other research participants which allows participants to share details of their own experiences not addressed in the researcher's questions.

Data analysis in qualitative descriptive research follows a process: developing rich summaries of the participants' experiences; analyzing the data for initial themes (or content, depending upon the researcher's choice); identifying similarities and differences; and categorizing data into overarching superior themes (Ang et al., 2018; Lambert & Lambert, 2012; Magilvy & Thomas, 2009; Sandelowski, 2000). The researcher is able to

gain an understanding of the participants' experiences through clustering similar ideas among the participants' experiences (Willis et al., 2016). Qualitative descriptive data analysis does not need to conform to a particular epistemological stance or theory as forcing data to fit a framework may alter the interpretations from the participants' actual descriptions (Lambert & Lambert, 2012; Sandelowski, 2000; Vaismoradi et al., 2016).

Research Design

I began to recruit participants in January 2020 after ethics approval was received to conduct the study. Please see the Ethics section within this chapter.

Sampling

Purposeful sampling methods were used to recruit participants aged 65 and above from communities in British Columbia (BC). Participants were recruited through responding to advertisements posted in community health centres, and online (see Appendix A). Posters describing the study included researcher contact information so that participants could contact the researcher directly for further information (see Appendix B). The study aimed to recruit between five to eight participants to examine the experiences of medication management among socially isolated, community-dwelling older adults.

Inclusion and Exclusion Criteria

Following approval from the Athabasca University Research Ethics Board, and University of British Columbia Research Ethics Board, men and women above the age of 65, of any ethnicity and socioeconomic status who lack social supports, live independently, manage multiple medications, and provided written consent were invited to participate in the study (see Appendix C). This study excluded: older adults diagnosed

with moderate to severe cognitive impairment, were not fluent in English, or lived in a long-term care or an assisted living facility**.** Although cognitive decline and dementia are noted to be risk factors for both social isolation and poor medication management, they contribute a level of complexity in health outcomes of community-dwelling older adults not within the scope of this study (Flowers & Miller, 2018; Government of Canada, 2014; Shankar et al., 2011). The goal of the study was to provide a foundation to understand the experiences of medication management among socially isolated, community-dwelling older adults, and increase awareness of the impact of social supports.

Tools Guiding Assessment of Social Isolation

Two scales were referenced to help define six indicators of social isolation: the Social Isolation Scale of the National Social Life Health and Aging Project (NSHAP) (Cornwell & Waite, 2009), and the Social Network Index (Cohen et al., 1997). Lack of social support, living alone, infrequent contact with others, perceived lack of support, low participation in social activities, and emotionally distant relationships are all potential indicators of social isolation referenced in the scales. Each participant was determined to be socially isolated if he or she had four of the six factors.

Participant Recruitment

Recruitment for research participants started in early 2020. Initial recruitment efforts focused on participants from two urban cities located in BC. Advertisements were posted in community health centres that provide health care to community-dwelling older adults (see Appendix A). Advertising the research study at the two community health centres associated with the regional health authority provided a direct route to connect

with older adults living in the communities that met the requirements for the study. The community health centres are not for social events but provide care to older adults in the community such as wound care, medication management, palliative care, chronic disease management, case management, and rehabilitation services. CHNs and case managers (CM) who work within the community health centres were asked to distribute posters and invitations to participate (see Appendix B) to their clients that they felt met the inclusion and exclusion criteria. I visited each community health centre to meet with community staff to explain the purpose of the study, inclusion and exclusion criteria, role of the participants, role of the staff in helping to recruit interested participants, distribute research materials, and answer any questions.

The invitations to participate and the posters included both my contact information and that of my thesis supervisor so that interested participants could contact me directly for further information of the study. The invitations to participants also informed them that upon volunteering for the study they would be provided with a $25 gift card as a thank you for participating. There was no further involvement of the CHN or CMs in the study, and participants were not required to inform their CHN or CM that they were participating in the study. This was effective in mitigating possible power influences from either myself as the researcher or as an employee with the regional health authority. As the participants were required to reach out to the researcher, this also limited participants from potentially feeling that their involvement in the study would influence the care they would receive from their CHN or CM.

In addition to the community health centres within the regional health authority, several other private senior centres and pharmacies were approached to advertise the

study, however, there were no participants recruited from these sites. In March 2020, senior centres in urban cities were also contacted in an attempt to advertise the research study, however, no responses were received. After two months, only three participants were recruited from community health centres affiliated with the regional health authority. All participants had informed me that they had been notified about the study through their CHN or CM.

During March 2020, Canada was significantly impacted by the Coronavirus (COVID-19) pandemic (BC Centre for Disease Control, 2020). As of April 2020, the health authority's research board ordered all recruitment efforts for research projects currently being conducted to be halted so that the health organization's research supports could go towards the pandemic. It is also possible that recruitment for the study may have been impacted by the COVID-19 pandemic as public health and the BC Centre for Disease Control enforced many regulations for social distancing, self-isolation, and the closing of public sites to prevent the spread of the virus. This also included limiting community services offered to older adults. As older adults were identified as a vulnerable population to contracting the virus, this may have further influenced the participation of community-dwelling older adults in the research study.

To continue recruiting participants for the study, I was required to revise the research design to include other methods of advertising and conducting interviews. These necessary changes also complied with the university's recommendations for social distancing while supporting ongoing research projects during the pandemic. A modification form was submitted to the university's research ethics board to revise the invitations to participate and consent forms stating interviews would take place over the

phone. The amendment to the study also included recruitment methods so the study could be advertised on two websites: Kijiji and Craig's List.

The research was advertised in the community section of Craig's List, and the volunteers needed section of Kijiji. Initially the advertisement was flagged as spam and removed. A disclaimer was added to the advertisement stating the authenticity of the study as a legitimate research opportunity with the university. The advertisement explained my role as a Master of Nursing student with the university, and the purpose of the study to examine the experiences of medication management among socially isolated, community-dwelling older adults. The posting outlined inclusion and exclusion criteria, the role of the participant, and stated that interviews could take place over the phone.

The online advertisements resulted in two interested participants; however, they did not reside in the cities where recruitment strategies were initially focused. Both participants resided in rural communities and expressed their desire to share their experiences as an older adult living alone in a rural community. The university's research ethics board was contacted regarding the expansion of the recruitment area and permission was received. Although recruitment efforts initially focused on two cities in BC, as recruitment had been challenging the two participants were included in the study. It is important to acknowledge the value of these participants' experiences in providing the perspectives of older adults living within rural communities where supports and services may vary from larger cities. The variances in the participants' settings provided further opportunity to examine patterns or differences in the experiences of medication management and social isolation among community-dwelling older adults.

By May 2020, a total of five research participants were recruited. Five individuals approached me that were interested in participating. Upon reviewing the inclusion and exclusion criteria, and details of the study all five participants agreed to participate. I was not contacted by any other research participants and recruitment was stopped. Recruitment lasted a total of five months. Three participants were interviewed in person, and the two participants from rural communities were interviewed over the phone.

Obtaining Consent

The three research participants recruited from the regional health authority were provided with the invitations to participate by their CHN or CM. The two participants who resided in rural towns and responded to the online advertisements were emailed the invitation to participate and consent form to review as this was their preferred method of communication. They were then asked to connect with me should they wish to pursue participation in the study. Upon contacting the researcher, participants had to review the details of the consent form (see Appendix C), and verbalize they understood the purpose of the research study and their role as a participant before signing. This aligns with the Tri-Council policy statement that consent is ongoing, informed, and given freely by participants in research involving humans, and to ensure that participants understand all details of the study before providing consent (Canadian Institute of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council, 2018).

Data Collection

A semi-structured questionnaire (see Appendix D) was used to inquire about the participants' subjective experiences of social supports, changes in social supports, and

experiences of managing personal medications. With the exception of the participants residing in rural communities, participants were provided the option of either conducting the interview within their home, over the phone, or meeting in an alternate location of their choosing. All of the interviews were recorded using an audio-recording device. The interviews lasted at least 50 minutes, with some interviews lasting 1.5 hours.

The interviews began by first asking the participants to tell me about themselves, their personal social situations, health history, and medications they were currently taking. From there, subsequent questions were asked to learn more specific details about the participants' experiences with medication management when socially isolated. If I required participants to elaborate more on specific aspects of their experiences, I was able to ask subsequent questions tailored to the details shared by each individual participant. This resulted in the necessary questions being addressed while allowing participants to share experiences relevant to them, without altering the natural direction of the discussion by asking questions off topic from their responses.

Data Management

All interviews were audio-recorded and transcribed verbatim. The length of time to recruit participants and conduct interviews provided me with the time to personally transcribe each interview. Although this may not have been possible in a larger research study with more participants, transcribing the interviews personally proved to be beneficial as a novice researcher as it provided me with further opportunity to immerse myself in the data and analyze the interviews for themes, similarities, and differences. Tables outlining the themes of each participant's interview were constructed and labeled

with a number 1-5, assigned to each participant; no personal identifying information was used.

Data Analysis

The focus of analyzing the experiences of medication management among socially isolated, community-dwelling older adults was to determine what their concerns were and what worked for them in managing their medications despite being socially isolated. The SEMH supported development of inclusion and exclusion criteria and semi-structured interview questions, however, these data were not forced to fit the underlying theoretical perspective of the framework. Although I inquired about participants' social relationships and the individual health practices of medication management, there were no assumptions made if the presence or lack of social relationships did or did not influence the ability of the participants to manage medications.

Manual thematic analysis was used to analyze these data. The first step in immersing myself in the data occurred during the transcription of the audio recordings verbatim. During this process I listened to and replayed the tapes repeatedly to ensure I had captured each word accurately. From there I was able to continually read each transcribed interview, develop descriptive summaries in a reflexive research journal, and underline key statements and phrases. Memos were written for each interview and essential phrases or statements were highlighted. Similar phrases and themes in the comments of the participants became apparent within each individually transcribed interview. From there a color was assigned to each group of similar statements, and the transcript was reviewed again to color code important statements for each prevalent theme. The key statements were grouped together in a table, and an initial theme given to

each group of similar statements (see Appendix E). Developing initial themes for each interview was a non-linear process: initial themes were modified throughout the analysis process. This process was repeated with each interview individually to ensure that key statements and initial themes were identified for each individual interview without being influenced or convoluted by analysis of subsequent interviews. As a novice researcher, this was important to ensure that each participant's unique experiences were captured accurately.

After the tables of key statements and initial themes were developed for each of the five participants, the interviews were analyzed collectively to identify overarching or superior themes (see Appendix F). This was accomplished through identifying similarities and patterns across the participants' experiences. Manual thematic analysis best supported the purpose of the research study to examine the experiences of medication management among socially isolated, community-dwelling older adults. As this is a phenomenon not previously researched well, the superior themes are developed directly from the participants' own words to provide a genuine view of their experiences.

Ethics

Approval to conduct the research study was obtained from both the Athabasca University's Research Ethics Board, and the regional health authority's research ethic board before recruitment efforts commenced (see Appendix G). I was also required to obtain operational approval from the site managers of community health centres where the study would be advertised. All research materials were created and reviewed by both the university and the regional health authority's research ethic boards. The invitations to participate outlined specific details of the research design, purpose, benefits and risks of

participating, and plan for disseminating the results. The consent form and details of the study were further reviewed with the participants prior to providing consent (Slowther et al., 2006).

Upon recruitment participants were informed of the right to withdraw from the study at any time during data collection and consented to the use of an audio-recording device. Opportunities were offered to the participants to further discuss the study prior to conducting the interviews, and a follow up opportunity to review their interviews. Participants were also made aware that when the study concluded the results and written report would be shared with the university, the regional health authority, and submitted to a research journal. Lastly, participants were offered a copy of the final written report (to be sent via mail), and their preferred method for future communication.

Confidentiality of the participants was maintained through assigning each participant a number. Nursing research that examines experiences of health and illness may result in participants' feelings of grief, anger, or loss; maintaining the well-being of the participants is the researcher's primary responsibility (Creswell & Poth, 2018; Slowther et al., 2006). Participants from the cities were offered lists of community resources which provided contacts for services such as volunteers, pharmacy outreach programs, food delivery programs, and crisis hotlines. Participants who resided in rural communities were offered assistance to find resources. All research participants declined that any resources were necessary. In storing research data transcripts and audio recordings were encrypted on a password protected computer, and hard copies of documents stored in a locked drawer in an office. All transcripts and audio recordings

will be shredded and discarded after the required minimum five years as mandated by both the university and the regional health authority's research ethics boards.

Older adults, those who are socially isolated and those that are cognitively impaired, are all considered vulnerable populations (Government of BC, 2014; Government of Canada, 2018; Government of Canada, 2014). Research targeting vulnerable populations is essential in mitigating health inequities and implementing successful interventions. As the study excluded older adults with moderate to severe cognitive impairment, and those not fluent in English, there were no concerns that participants did not understand the details of the study or were incapable of providing consent. Furthermore, interested participants were required to initiate contact with the researcher through either email or phone. This demonstrated the cognitive ability of older adults in choosing to participate in the study, and mitigated risks of potential power influences from either myself as a researcher or employee with the health organization, or the recruitment efforts of the CHNs and CMs.

Trustworthiness and Credibility

Trustworthiness compares to rigor in quantitative research and is obtained when researchers have demonstrated the data analysis procedures so that the audience can determine if the research is credible (Creswell & Poth, 2018). Credibility, as one aspect of trustworthiness refers to the truth of the research findings (Creswell & Poth, 2018). Self-reflection during data collection and analysis enhances credibility as well as reduces possible researcher influences. The researcher must ensure that assumptions, beliefs, and previous experiences do not influence the research results. Recording work in a reflexive research journal was an essential tool to record the development of the study. I was able

to reflect on my learning and thoughts throughout the research study such as aspects of the research design, methodology, and findings from the literature review that I want to investigate further within my own research. It also allowed me to reflect on my analysis of my research findings throughout the study.

Summary

Over the duration of five months, five research participants were recruited. Initially the recruitment efforts focused on older adults from urban cities, however given difficulties experienced with recruitment the geographical location of participants expanded to include other communities from participants who responded to online advertisements. Recruitment efforts for research participants were significantly aided through online advertising. This also resulted in connecting with research participants who were able to speak to challenges faced by, and advocate for, older adults living within rural communities. Data were analyzed using thematic analysis to identify initial and superior themes.

Chapter 5. Results

Overview

The steps taken for self- reflection are reviewed. The initial themes and superior themes identified among the participant interviews are presented in this section. Two of the superior themes centralize around medication management and social isolation, which is not surprising as this was the focus of the research study, however other themes are presented within the shared experiences of the participants. There were both similarities as well as differences within the participants' experiences. There were also complex relationships evident among the themes presented in the findings.

Self-Reflection of the Interviews

Self-reflection was aided by the use of a reflexive research journal throughout the process. The conversation flowed naturally, and participants were forthcoming with sharing their experiences during the interviews. This demonstrated the participants' willingness to share their experiences. I also attribute the ease of the interviews to my eight years working as a registered nurse in community health. Conducting interviews and assessments in clients' homes is a natural part of the job and I felt comfortable listening to the participants share details that were important to them about their experiences. The difference with these particular interviews compared to those previously within my role as a CHN was being continually aware of my role as a researcher. I had to be conscious not to respond to the participants' comments with healthcare advice, but to listen actively as the participants shared their stories. As my current role with the health organization is a clinical resource role for staff, and I do not

provide direct client care, there was no risk of conflict of interest, or that I would encounter them within practice.

The use of an audio recording device was also essential in allowing me to listen wholeheartedly to the participants' accounts of their experiences, while watching their facial expressions and body language, and listening to their tone of voice. This proved more difficult with interviews conducted over the phone as I was not able to observe their physical reactions; however, performing comprehensive assessments over the phone is also something I have experience doing as a CHN. Although participants spoke of difficult things such as changes in their health prompting the use of medications, challenges with accessing health care resources, and changes to their social situations, they did not become emotional or upset; nor ask to end the interviews prematurely.

Research Participants

Five participants were interviewed: three participants from urban cities, and two participants living in rural communities. Participant 1 was a 67-year-old man living in a rural community. He worked as a tradesman. He reported taking medications for back pain, an enlarged prostate, high blood pressure, an overactive bladder, and to treat "uneasiness". He has lived on his own for 15 years, and his children have all relocated to larger cities.

Participant 2 was a 72-year-old man living alone in a rural community for 10 years, and his only son lives in a larger city. Participant 2 stated that he takes two medications for high blood pressure and atherosclerosis. He experienced many frequent changes to doses and scheduling of his medications.

Participant 3 was a 90-year-old woman who has been widowed for four years. She reported taking over the counter medications such as Imodium, vitamins, and Tylenol for sleep. She also noted having a standing prescription for antibiotics, taking diuretics occasionally for lower leg swelling, and having multiple drug allergies.

Participant 4 was an 85-year-old man who had been widowed for 14 years. His only son travels for work and is out of province for approximately half the year. He recounted no history of health concerns, and his only regular medications were Aspirin and medication to treat an enlarged prostate. Recently he was diagnosed with atrial fibrillation, and during an appointment with a physician he was started on a new medication regimen, inclusive of six new medications to treat blood pressure, high blood sugar, high cholesterol, and a blood thinner.

Participant 5 was an 83-year-old woman who was widowed. She managed 17 medications to treat osteoporosis, atrial fibrillation, heart conditions, chronic renal failure, chronic obstructive pulmonary disease, osteoarthritis, hypertension, hypothyroidism, dyslipidemia, and peripheral neuropathy. Participant 5 also used inhaled medications (i.e., puffers) and had a history of breast cancer and depression.

Table 1

Participant Demographics

Participant	Age	Gender	Marital Status	Community
1	67	Female	Widowed	Rural
2	72	Female	Divorced	Rural
3	90	Male	Widowed	Urban
4	85	Male	Widowed	Urban
5	83	Female	Widowed	Urban

Data and Themes

The findings from this study examining the experiences of medication management among socially isolated, community-dwelling older adults were best presented from most to least prevalent themes. The overarching superior themes identified across participant interviews included: complexity of managing medications; variations in how social relationships are conceptualized; managing healthcare resources; and personal health practices and beliefs. Although pain was only identified as a challenge among two participants, impact of pain was included as a subcategory in personal health practices and beliefs as chronic pain significantly affected the experiences of the two participants.

Complexity of Managing Medications

Given the focus of the research study to examine the experiences of medication management among socially isolated, community-dwelling older adults, it is not surprising that these were the focus of two of the superior themes identified across the

participants' interviews. The interviews revealed both patterns and variations in the challenges participants experienced with managing their medications. The initial themes identified within the participants' interviews included: frequency in taking medications and forgetting medications, difficulty managing frequent medication changes, not taking medications as prescribed, difficulty managing polypharmacy, and multiple medications and co-morbidities. Overall, the participants had a thorough understanding of their health concerns and the medications they were prescribed. Several participants also identified the potential role of a spouse or partner to assist with medication management had their spouse still been alive or had they been in a relationship. Other challenges identified by the participants included varying opinions of medication use from the general practitioner (GP), and multiple prescribers involved in care.

Managing Multiple Medications on Your Own. A subtheme shared by four of the five participants was in difficulty managing the number of medications. Participant 1 discussed the challenges of monitoring multiple medications, doses, and frequency:

> I'll be honest with you sometimes I just forget, that's all there is to it. Uhh you know I should look into maybe having some other type of reminder system. I keep track of appointments with my doctor and what not, medical stuff like that Something that is that frequent, you know it's just I tend to forget. It is just so frequent.

He further commented that managing the frequency of his medications was difficult as an older adult living alone: "I guess it's a curve from when I was married; I didn't take as many medications but my wife, she would always remind me, so not having her around…". Participant 1 used a pill organizer to try to manage his medications more

effectively, however, admitted that this is not always successful, and he still forgets to take his medications. Neither recent medication changes, nor adverse effects were contributing factors to the difficulty of managing medications. Although he did report some adverse effects, he was not able to determine if these effects were related to the medications themselves or from his elevated blood pressure.

Participants 2, 4, and 5 also reported challenges associated with managing multiple medications and frequency. Although Participant 2 only reported taking two medications, he shared that it was difficult to manage frequent changes to the doses, and stopping or restarting prescriptions:

> Normally the complication is how many pills I should take every day. So it is something for me it is something hard to control, but it all depends on my condition of that day. So sometimes, every week I call my family doctor.

Although Participant 2 reported he did not experience any side effects from his medications, he stated that taking medications did not make him feel good mentally.

Similarly, Participant 4 also reported challenges associated with difficulty organizing multiple medications and remembering when to take them: “As I’m on my own I guess I kind of discipline myself. To say if I don’t, I’ll get confused”. Unlike Participant 1, he found that the pill organizer was incredibly helpful in sorting his multiple daily medications. He further discussed his past experiences as a caregiver for his wife, and shared his views of the role of a spouse in assisting with tasks such as taking medications: “If you were married then either you would tell your wife or she would tell you, but when you’re alone you have to tell yourself”.

Participant 3 was the only one who expressed no concerns with managing her medications. In comparing shared experiences among the participants, she also reported taking medications not always supported by her doctor. Participant 3 expressed having varying opinions of what she should be taking from that of her doctor: "My doctor doesn't approve, I uh, I tried a couple of naturopathic ones and they didn't do the trick so why bother?" She also expressed concerns regarding medications being managed and administered to older adults by staff in facilities:

> My concern is that where is it kept, you know, can someone else get access to it because that was what was happening in the nursing homes in Ontario. And why are you being given it, I am sure a lot of them don't.

Participant 3 also shared her experiences as a caregiver leading up to the death of her husband. Although she reported her husband was fairly independent and managed his own medications, she had played a role in monitoring and making him aware of adverse effects from the medications.

Managing Multiple Medications and Co-morbidities. Another sub-theme identified by several participants included experiences of managing multiple medications and co-morbidities. Participant 4 discussed his history of experiencing no major health concerns warranting the use of medications, to recently being prescribed several medications at one time. The medications were prescribed to treat conditions he had been previously trying to manage through lifestyle changes: high cholesterol, high blood pressure, and high blood sugar. Although he stated he agreed with the physician's recommendations, he also felt that starting so many medications at one time was impudent: "I thought he was a little bold with all that medication at once". Fortunately,

he did not experience many side effects other than general fatigue but did follow up with his doctor regularly to be monitored for possible adverse effects.

Akin to Participant 4, Participant 5 also reported challenges associated with multiple medications and prescribers. In addition to the 12 medications she took to manage various co-morbidities, she also was takings daily inhalers, eye drops, and multiple medications for pain. Unlike the other participants who organized their own medications in a pill organizer, Participant 5 had the pharmacy blister pack her medications: “I’m not too good at remembering; when you take as many as I do it is easier to put them in a blister pack”. Regardless of this she still reported forgetting to take her medications throughout the day which caused her frustration. Participant 5 was aware of her health history and generally what her medications were prescribed for, however, could not relay the medications by name or purpose: “I can’t understand half of what they are”.

When discussing the experiences of medication management as an older adult living alone, the most significant challenge Participant 5 shared revolved around trying to manage chronic pain, as well as the effects of chronic pain on her mobility. Although she trialed several medications to try to alleviate the pain, she ultimately found them to be ineffective. She further admitted that although her doctor did not always agree with her pain management regimen, she continued to take a combination of acetaminophen, acetaminophen with codeine, Cannabidiol (CBD) oil, and medications for neuropathy. Any of the side effects of medications Participant 5 experienced were a result of her pain medications.

Variations in How Social Relationships are Conceptualized

The second superior theme identified across the interviews was variations in how social relationships are conceptualized. When discussing with the participants their experiences of medication management as socially isolated older adults, they revealed how their social relationships had changed during their transition into older adulthood, and how this influenced various aspects involved with available supports and managing medications.

Distance and Social Relationships. Participants 1 and 2 had comparable experiences in being older adults, living alone in a rural community, and having children who had relocated to cities. During the interview, Participant 1 discussed multiple changes to social relationships and supports as he aged. As stated previously, when discussing his experiences of the challenges associated with managing his medications, Participant 1 highlighted the role of a spouse in assisting with this task (spouse now deceased). He also shared that although he does not see his children often, he felt they would reach out when he needed more support as he ages:

> I am a very proud person. My children have children of their own and they, uh you know, they are good kids; but you know I remember when my parents were getting old and I remember what was running through my mind and saying yes that is my mother and father, but I have children now. I have to look after these children first. So I, uh, uh they are good kids so they will know when it is time to invest more of their time with me. You know, I just, you feel guilty you know.

Outside of family relationships, Participant 1 also commented on his retirement resulting in changes to his social circle.

Both Participants 1 and 2 shared that living in a rural community was accompanied with many challenges in later stages of life, especially for older adults who relied on supports for things such as transportation to appointments, and access to healthcare resources for addressing concerns related to health and medication management. Although both participants were still able to drive themselves to appointments and run errands, Participant 1 expressed his concerns about the day he could no longer drive. He emphasized that managing health concerns was not easy for older adults as it often required planning around many barriers such as transportation and accessible resources. Akin to Participant 1, Participant 2 also felt that his son would support him when he needed it. Participant 2 also expressed that although there were fewer resources in rural towns, that he preferred the uncomplicated life of smaller communities to larger cities. Regardless of the challenges, Participants 1 and 2 both preferred to reside in a rural community for the solitude and simpler way of life.

Independence and Social Relationships. For many of the participants, level of independence in managing their health was a factor that influenced social relationships. Participant 1 was independent and stated he was set in his ways and did not want to make changes in his life in order to increase social support. He also noted that as he aged and lost his independence it could be difficult to manage his health. Participant 1 already noted the difficulty of managing his medications on his own now and reported that his wife could have assisted him if she was still in his life. Participant 2 voiced similar concerns that he preferred to live on his own, however, lack of social supports made it difficult to manage tasks such as medications if he had concerns or questions. As a result, Participant 2 reported he would need to connect with his doctor.

Participant 3 discussed her experiences of living on her own after her husband died and stated that although there were social events for seniors in the area where she lives, she preferred not to participate in them. She also discussed her concerns and fears of being an older adult placed in a facility where staff manages their medications, not having social support to assist, and residents not knowing what medications they were being given. When discussing her relationships with her family, many who live in other provinces, she shared regrets she had when she was younger and her mother and aunt lived on their own: "I thought I was being a good daughter, I thought, um, it's not that I'm feeling guilt, now that I am elderly, should I have been doing more?" It was then that she expressed her desire for independence and that she felt fortunate to be in good health and still driving.

Participant 4 also shared similar experiences in losing a spouse, the transition to living alone and the desire to be independent in managing his health, including managing his own medications. Participant 4 knew that his wife would have assisted him to manage the many changes to his medications, however, now he did not have that support and needed to manage medication regimens independently. He further discussed his experiences of social relationships with other seniors and admitted that he had difficulty with continuing these social relationships after the death of his wife. Participant 4 felt that having social relationships with other seniors would "age him". The death of his wife presented a crossroad for him:

> I don't even have to walk the dog. You better get something, you don't have a single thing; nobody knows you're alive or dead, nobody really cares. I had to be brutal; politely close the doors on some people I had known 20 years

> that were suddenly old. If I hang around them, I'm going to end up in a home some place, I can't let myself do that, I have too much to live for.

Participant 4 further commented on the adjustment to living alone and the role of social supports in helping him manage health practices, such as managing medications:

> I don't have anybody, I live on my own, so I've had to be disciplined, you need someone to stabilize you, you would tell your wife, or she would tell you but when you're alone you have to tell yourself.

Unlike the other participants, Participant 5 was not as independent, and relied on many resources for older adults such as transportation services, meal delivery services, medical alert, and support from the pharmacy to organize and deliver medications. The experiences she shared were also unique in the challenges and changes to her social supports she experienced with aging. Participant 5 experienced a divorce, death of her second partner, death of her ex-husband with whom she had reconciled, death of her brother, and challenges in her relationship with her adopted son. As of result of the challenges she experienced, Participant 5 shared her history of stress and depression. Lastly, one of the greatest challenges impacting Participant 5's ability to build further social supports was her inability to effectively manage her chronic pain and limited mobility. Participant 5 took several medications to try to manage pain, however the medications and treatments were not successful: "I get down because it's difficult to get around. I see people walking and wish I could do that".

Managing Healthcare Resources

A third superior theme highlighted in the analysis of the participants' interviews is managing healthcare resources. Living in rural communities, Participants 1 and 2

shared similar experiences of limited access to resources. Participant 1 emphasized that limited access to physicians and pharmacies made managing healthcare concerns challenging. He also reported that the difficulty in getting an appointment with a doctor often resulted in utilizing the hospital to manage health concerns. He felt that rural communities required improved services for older adults such as home support to help them manage health and medication concerns. While Participant 2 was unaware of services available for older adults within his rural community, he expressed similar views regarding poor accessibility to healthcare resources, clinics, and hospitals.

All participants reported overall positive relationships with their general practitioners (GPs), and saw them as a resource for health and medication concerns. During the interview with Participant 2, when discussing the frequent changes to his medications he shared: “I think my family doctor is very specialized, and knowledgeable and experienced. He is in his 50s as well. I trust him when he says there is some conditions abnormal”. He further shared he sometimes contacts his GP as often as once a week for questions related to his medications. Participant 3 also discussed her relationship with her GP: “He takes your blood pressure, he checks your eyesight, and the rest of the time you sit and chat. You’re not answering the questions that you think you might be answering. He just knows us well”.

Participants were also adamant that although their GPs may not agree with decisions regarding medications that they should still be aware of how medications were being managed. Furthermore, GPs should be informed of medications prescribed by other physicians. Although Participant 5 reported she also contacts her pharmacist for questions related to her medications, all participants saw the GP as someone they could

trust, a resource to assist with navigating the healthcare system, and to assist with coordinating care.

Two participants touched on their experiences and challenges associated with multiple prescribers involved in their care. Participant 4, who was also followed by an orthopedic physician and a cardiologist, was unnerved that his GP was not updated of new medications prescribed by his cardiologist. Participant 5, who was followed by several doctors to manage her multiple co-morbidities, had medications prescribed by a cardiologist, orthopedic physician, a pain clinic, a dermatologist, and a clinic for chronic obstructive pulmonary disease (COPD). In addition to multiple prescribers, Participant 5 also shared the challenges she experienced in trying to manage multiple health care providers, appointments, and transportation to these appointments.

Personal Health Practices and Beliefs

The last superior theme shared among the participants was personal health practices and beliefs. The initial themes identified within the participants' interviews included: personal health beliefs, medication and health practices, independence, health decisions, and coping with health issues. This superior theme became apparent during the participants' interviews and discussions of their experiences related to medication management, social supports, and relationships with healthcare providers as touched on in the above discussion of findings. Each participant shared unique personal health practices and beliefs that either influenced, or were influenced by, their experiences.

As stated previously, Participant 1 was eager to share his experiences as an older adult living alone in a rural community. Although he shared that he felt he was entering a challenging period of his life, made even more challenging by living remotely, he had no

plans on relocating. For him, a life of solitude was his: “comfort zone”. Participant 1 also believed that the health challenges he experienced such as blood pressure and prostate enlargement were normal with aging, but that his own decisions and career as a tradesman contributed greatly to the challenges he now experienced, such as chronic pain. Participant 2 also preferred the uncomplicated life of living in a rural community. As stated previously he felt that although medications did not solve the health challenges experienced with aging, that ultimately taking medications was necessary. Comparable to Participant 1, Participant 2 also expressed no desire to relocate to a city for accessibility to improved healthcare resources.

Participant 3 shared some of her health practices and beliefs such as trying naturopathic treatment. Comparable to Participant 1’s views of pain medications, she felt that some side effects of medications and treatments were worse than the actual health concern itself. Although she felt fortunate to still be independent and in good health, her cognitive ability was of primary importance: “I would be happy in a wheelchair as long as I know I am in a wheelchair”.

Participant 4 was forthcoming with many of his personal beliefs and perspectives on aging: “You can talk yourself into not doing things, one of the big traps about getting older; justify maybe I don’t or shouldn’t be doing this, maybe I shouldn’t be expected to do this”. He also shared some of his personal goals as an older adult living alone and managing changes to health. Participant 4 admitted that although things do not come easily as he ages, he still needed to prove he was capable of learning new things to increase his feelings of happiness.

Participant 5 presented a completely different perspective of her health beliefs and practices from other participants. The interview opened with her sharing strong feelings of her poor health status, difficulties with physical functioning, and being overweight: “I’m getting older and more decrepit”. She also stated that: “as far as my health is concerned and as far as my leg is concerned, I am too far gone”. Although Participant 5 expressed more negative views of her physical health status, she did share her confidence in managing her mental health. She stated that although she declined medications to treat depression and stopped her counseling sessions, she felt confident in her ability to self-manage her depression.

Impact of Pain and Pain Management. A subtheme of personal health practices and beliefs was also identified: impact of pain and pain management. Although pain management was only identified as an initial theme in two of the participants’ experiences, it is essential to highlight in the findings as it contributed to many of the challenges they experienced in managing medications, social relationships, and overall quality of life. Participants 1 and 5 both shared their experiences of how chronic pain had impacted their lives, which was addressed briefly when discussing the findings of the other superior themes.

Participant 1 believed his pain stemmed from his career as a tradesman. Although coping with chronic pain was a significant challenge for him, he felt that pain medications were not worth the risks associated with them:

> I can’t believe some of the things young people are offered and their adverse effects on their life, I just uh, that is something not, it is not something that takes a scientist to figure out that taking that gamble is, just well it’s a gamble.

Furthermore, although he followed up with his GP regularly to discuss pain management, he preferred using non-pharmaceutical techniques to manage pain such as the use of heat and cool packs, gels, and remaining active.

For Participant 5, chronic pain significantly impacted both medication management and her ability to participate in social activities. She experienced chronic, debilitating knee pain, and neuropathy: an effect of her history of treatment for cancer. Participant 5 reported that she experienced constant pain: "almost 24/7". As already reviewed, Participant 5 wished she was more independent, and could get out more. The interview with Participant 5 ended with a profound moment in which she shared:

> Sometimes I have the strangest dreams I'm walking all over the place and I have my cane with me but I didn't need it, and I said I don't need the walker today, and I do, I'm walking. And it's the one thing that I really would want to do, and so I have this nice walk in my dream.

These dreams represented the one thing she wanted that she felt could change her quality of life: to be able to get out socializing and enjoy the activities she once used to.

Summary

Five participants were interviewed, three within the urban cities, and two participants who lived in rural communities. The complexity of managing medications and co-morbidities were shared among many of the participants. There were also variations in how social relationships are conceptualized. Some saw changes to their social relationships as hindering their ability to manage health practices such as medication management, while others saw changes in their social supports as a drive to be independent. Managing healthcare resources and multiple prescribers were also two

themes that were shared among many participants. The most interesting theme that was shared among the participants' experiences was the influence of personal health practices and beliefs over medication management and social supports.

Chapter 6. Discussion

Overview

The focus of qualitative descriptive research is to provide an accurate and true account of each participant's own experiences (Magilvy & Thomas, 2009). This is inclusive of similarities and differences among the participants' experiences. When examining the experiences of medication management among socially isolated, community-dwelling older adults, the four overarching superior themes included: complexity managing medications, variations in how social relationships are conceptualized, managing healthcare resources, and personal health practices and beliefs.

Reflecting on the purpose of the research and the findings provides essential insight into many of the challenges older adults experience while also accentuating the unique experiences of each participant. The literature review described many challenges associated with managing medications among the older adult population, and often identified social supports as an intervention to overcome challenges. Until now, I am unaware of any research that addresses medication management among socially isolated, community-dwelling older adults.

What this Study Contributes to our Understanding of ……

The study provides a beginning understanding of how older adults address medication management when they are socially isolated. The participants shared their concerns and challenges with managing medications. This type of understanding is not provided in other research studies. The chosen methodology for the study focused on understanding the participants' experiences of medication management when socially isolated. Although there were no assumptions made regarding any relationship between

the two concepts, the findings support that the superior themes should be weighed collectively.

Examining the initial and superior themes illustrates intricate relationships between challenges of managing medications as an older adult, managing healthcare resources, and the influence of personal health practices and beliefs while experiencing a lack of social supports. It was difficult to extricate and discuss the superior themes individually as they were considerably interwoven throughout each participant's experience. When older adults live alone, understanding their experiences of medication management is a crucial first step in supporting healthcare providers to appropriately assess and respond to these needs. Social supports play an essential role in communicating to healthcare providers the individual needs of older adults, such as tasks associated with medication management (Godfrey et al., 2013; Longman et al., 2012). Healthcare providers need to ensure they ask the necessary questions to assess if older adults can manage their medications, if they require additional support, and if they have support at home.

The Importance of Beliefs about Health and Health Care

What is significantly evident in the participants' experiences of medication management while socially isolated is the influence of personal health practices and beliefs on all superior themes. Personal health practices and beliefs influenced many of the participants' decisions surrounding medication use, healthcare decisions in how to manage health, manage pain, coping mechanisms employed, perspectives of social relationships, and utilization of healthcare resources. The participants' personal health practices and beliefs also influenced experiences of living with chronic conditions and

reaching out to family members for support. Relationships with primary care providers, and other prescribers were also influenced by participants' personal health practices and beliefs in what they would contact their healthcare providers for: advice they would follow, and medications they took. The SEMH supports that health outcomes are influenced by social, individual, and environmental characteristics (Greenfield, 2012). As seen in the participants' experiences, individual health practices and beliefs were further influenced by their environments, where they live, access to health resources, and how social relationships are conceptualized.

Four superior themes emerged when analyzing these data. Given the focus of the study to examine the experiences of medication management among socially isolated, community-dwelling older adults, it is not surprising that medication management and social isolation are two superior themes. What is particularly important to recognize is how personal health practices and beliefs and healthcare resources influence medication management among socially isolated, community-dwelling older adults. Although we cannot speculate to any degree about the causative or dependent relationship between the superior themes, these data provide evidence that healthcare practices and beliefs influence the experiences of both medication management and social isolation.

Personal health practices and beliefs can significantly influence medication management practices, compliance to medications, and decisions on when to seek support from family members or caregivers. For older adults who live alone personal health practices and beliefs can further influence them in connecting with healthcare providers or resources for support to manage their health These findings are consistent with the views and strategy of the CMA (2016) to support older adults to remain at home

by meeting their physical, cognitive, and psychosocial needs, and aligning supports with individual needs. This requires encouraging older adults to be engaged in advocating for their needs and understanding their views and goals of care.

Precariousness of Health and Ability to Manage Medications over Time

Previous research identified an inverse relationship between social support and the risk of poor health outcomes among community-dwelling older adults (Government of Canada, 2014). Poor health outcomes are further linked to specific health practices such as the ability to manage medication. An intervention to support this task must incorporate the support of family members and friends (Gellad et al., 2011; Maloney & Kagan, 2011; Marcum & Gellard, 2012; Miller & DiMatteao, 2013). Although the duration of the study was not long enough to demonstrate a link between decreased social support and poor health outcomes, and neither was this the purpose of this study, participants did verbalize that a spouse would have played a vital role in assisting with managing medications, frequency, and changes to medications regimens.

Many participants used methods to organize medications but shared that this method alone was not always sufficient to resolve poor medication compliance. This was significantly evident for Participants 1, 4, and 5 who experienced significant changes in health status and medication regimens, polypharmacy, and working with multiple prescribers. These are all challenges identified in previous research as barriers to managing medications (Gellad, et al., 2011; Look & Stone, 2018; Noureldin & Plake, 2016). The findings provide evidence that the support of a spouse or family member would result in more oversight, reminders, and overall support in managing medication correctly, however these supports are not present for those who are socially isolated.

The most common challenge the participants experienced with managing medication as an older adult living alone was frequency and forgetfulness. In reflecting on the participants' experiences, their ability to manage their healthcare needs, and in my personal experiences as nurse working with the older population in the community, challenges that were surprisingly not experienced by the participants were obtaining prescriptions, transportation to medical appointments, or adverse effects from medications resulting in hospitalization. Participant 5 was hospitalized for complications from COPD, however, she was unable to determine if not taking her medications as prescribed contributed to this. Other challenges also not significantly prevalent in the participants' experiences that are often highlighted in previous research were financial barriers to obtaining medications, managing adverse effects, and bridging gaps of physical and cognitive decline (Bustamante et al., 2018; Godfrey et al., 2013; Look & Stone, 2018; McGillicuddy et al., 2019; Noureldin & Plake, 2016; O'Quin et al., 2015). This can be explained as all the participants, except one, continued to drive and were independent in managing their care needs. The only participant that did not drive had access to resources for transportation and medication delivery. Furthermore, the absence of moderate to severe cognitive impairment was a requirement to participate, so these participants could mentally process the challenges they were facing.

Variations in Social Support over Time

The results of the study also illuminate that changes to social relationships experienced with aging pertain to more than being married, widowed, or divorced. Participants recognized that loss of social relationships was a natural part of aging. A novel finding was that social isolation was not necessarily permanent; a few of the

participants expressed confidence that their family members would become more involved in their health care, including medication management, in the future. The findings also accentuate that social relationships and interactions can either encourage or inhibit positive reflections of the transition into older adulthood. Previous literature identified the role of social relationships in providing emotional support to assist older adults in adjusting to illness and specific health practices (Miller & DiMatteo, 2013; Wu et al., 2013). The experiences shared by the participants provide evidence of this, but after being left alone after the death of a spouse, some participants saw this as a realization that now that they were alone this may put their heath in jeopardy in the future. Participant 3 and 4 stated after the death of their spouses they knew this affected their social support and used the transition to being alone as an opportunity for growth and independence. For all participants, the death of a spouse forced them to continue to seek support from physicians and pharmacies to manage medications and used the transition to being alone as an opportunity for growth. Relationships with older adults were also reminder of the decline in abilities some experience with aging; they did not want to fall into the preconceived stereotypes that the physical, cognitive, and social health of an older adult is on a continual decline.

Efforts to Compensate for Social Isolation

The literature review revealed that poor medication compliance resulted in increased hospitalization, and that social support and community resources were paramount in addressing medication challenges among older adults (O'Quin et al., 2015). In examining experiences of medication management among socially isolated, community-dwelling older adults, one of the shared experiences was the role of the

prescriber: either the GP or another physician. Regardless of who prescribed the medications, all participants conveyed the need to inform their GPs of any changes to their medications, and of all medications they were taking. This was particularly highlighted in the interviews with Participants 3, 4, and 5. More data may have been revealed in a longitudinal study on the effectiveness of reliance upon the GP to address medication concerns when lacking informal support at home.

The Canadian Institute for Health Information (2020) reported that by 2024, over the following 20 years the population of older adults, age 65 and older, in Canada will increase by 68%. Furthermore, older adults 85 years and older are the fastest growing population in Canada. As a result of this, the CMA (2016) called for a strategy inclusive of: addressing polypharmacy in older adults; supporting older adults to remain at home independently; incorporating practices to meet physical, cognitive, and psychosocial needs; and offering improved primary care services for older adults in the community. All participants had positive relationships with their GP and saw them as a resource to address questions pertaining to medications, polypharmacy, side effects, pain management, and managing multiple co-morbidities. The findings confirm that participants received much support from their primary healthcare providers, and that the GP played a role in supporting these older adults who live alone to manage their health. Considering the strategies identified by the CMA, and the support participants receive from their GPs, it can be concluded that healthcare providers caring for community-dwelling older adults need to ensure their clients are connected with a consistent primary care provider.

Concerns about the Future and Their Ability to Manage

It is particularly important to recognize other challenges associated with managing health that became evident when investigating the experiences of the participants. The support of family, friends, and neighbors can assist with tasks such as managing medications, however; little is understood of how this task is accomplished when social supports are absent. The participants reported relying on their GPs for questions pertaining to medications and were all able to communicate their health concerns. Although participants were able to drive or organize their own transportation arrangements, they also voiced concerns on what would happen when they could no longer drive. Participants residing in cities were knowledgeable of how to access healthcare resources, however, one of the rural participants was not aware of supports available to seniors in their community. From this standpoint we can speculate that this would become even more challenging for older adults who could not advocate for their own concerns and healthcare needs.

The findings leave room to question how socially isolated older adults would manage when they lack insight (i.e., significant cognitive impairment) to manage or advocate for their health concerns. The findings also demonstrate how a slight change in the physical ability of an older adult can impact multiple factors such as: managing independent activities of daily living, advocating for healthcare concerns, arranging tasks associated with managing medications, and communication between multiple healthcare providers. The implications of these findings emphasize the multiple layers associated with managing medications and health as an older adult living alone. Social support is identified as one of the top five determinants of health to support tasks such as coping

with health challenges, managing illness, and functional and cognitive decline (Disease Prevention and Health Promotion, 2019). Future research would be required to investigate possible interventions, such a pharmacy outreach programs and home support services to assist with medication management. These interventions would mitigate challenges older adults experience with managing their medications and address poor health outcomes resulting from increased care needs, poorly managed medications, and lack of social support.

How This Research Fits with Previous Research

Previous research identified aspects of medication management that may present challenges for older adults who live alone, and suggest incorporating social supports; however, they did not offer suggestions for older adults with no social support, limited transportation, polypharmacy, and monitoring adverse effects (Godfrey et al., 2013; & Kagan, 2011; Marek et al., 2013; McGillicuddy et al, 2019; Miller & DiMatteo, 2013, Wu et al., 2013). These aspects were also shared by the participants. The study by Marek et al. (2013) identified that older adults often counted on family members to remind them when medications were due. Several participants also reported that social support could aid reminders.

In the study by Wu et al. (2013), social support was required to assist older adults to manage chronic disease. Social support was classified as functional support to assist with physical tasks with managing medications such as: following medication regimens, getting to the pharmacy, and opening pill bottles. These tasks are further influenced by the older adults' level of physical and cognitive functioning. Participants in this research study did not experience cognitive challenges so this factor was not addressed. They did,

however, comment on following medication regimens, and getting to the pharmacy; tasks they were still able to perform but noted to be more difficult on their own.

Clinical Interventions and Future Research

Further in-depth research is still needed to assess the challenges isolated older adults in community experience when managing their medications. This should include a community approach to assess challenges and develop appropriate community supports to address challenges when social supports are lacking. It is not new knowledge that a community-based approach is essential in resolving challenges socially isolated older adults experience when managing medications (Government of Canada, 2018; Longman et al, 2012; Nicholson, 2011; Valtorta & Hanratty, 2018). This would also vary per community and available resources. As discussed by Participants 1 and 2 who lived in rural areas, they were unsure of possible community resources, and the distance to healthcare resources. Pharmacy outreach programs, medication monitoring whether though healthcare workers or technology could also support isolated older adults. Improved screening of poor social support affecting care is also required when older adults are seen by healthcare providers, or by pharmacists.

More specific research and longitudinal studies would be necessary to assess the effects of cognitive impairment on medication management when social supports are lacking. Longitudinal studies would also be beneficial to assess adverse effects of medications and how older adults who live alone manage this independently. The participants within this study were independent and able to connect with healthcare providers regarding medication management concerns. As this was the first study to explore experiences of socially isolated older adults, a study with a larger sample size

would provide information on how strategies change over time, and when health begins to fail or individuals can no longer drive.

This study was significantly different from others in that the participants discussed their beliefs about health and medications. Participants discussed not taking medications they did not think were required. Future research could specifically examine the influences of the health beliefs and practices on medication management, and if the presence of social support to encourage medication compliance had any effects. Lastly, studies longer in duration would be required to study the effects of poor medication management among socially isolated community-dwelling older adults and hospitalizations from adverse effects.

Implications for Nurses

The knowledge gained from this research study has meaningful clinical implications for healthcare providers and nurses in both acute care and community settings. To improve the experiences of medication management among socially isolated, community-dwelling older adults, nurses need to assess multiple factors, both individually and collectively, that may impede or aid health-related tasks. Nurses need to assess the ability of older adults to obtain medications such as getting to the pharmacy or ability to afford medications. Nurses also need to assess if older adults understand why they are taking the medication, potential side effects, and when to contact the doctor. Individual characteristics should also be assessed, such as if there is any cognitive impairment that may contribute to taking medications incorrectly.

The research results reveal that the ability to manage medications when socially isolated is further influenced by healthcare resources, and health practices and beliefs.

Increased knowledge of the influence of health practices and beliefs is specifically fundamental for nurses involved in the care of older adults. Nurses should ask older adults about their own health practices and beliefs, their goals around care, how they will know when to seek support, and potential barriers to achieving optimal health.

In providing comprehensive and holistic care, nurses who care for older adults should identify and assess: possible social support networks; older adults who are socially isolated and level of social isolation; medication management tasks that may be difficult to manage alone; functional and cognitive ability; available community resources; and ensure that all older adults are connected with a primary care provider to oversee care.

The aforementioned assessments should also be conducted repeatedly over time as factors may have changed from previous assessments due to changes in healthcare providers, or changes in physical and cognitive functioning. Further, nurses need to take extra time with socially isolated older adults to answer questions such as medication questions (as in the case of Participant 2). Nurses working in acute care settings should be aware of all factors that may influence older adults in following medication regimens upon returning home from hospital; if they need social support of caregivers and family to support medication management; and set up any social supports for older adults who are socially isolated to assist with medication tasks.

Limitations

The findings provide insight into the complexity of the experiences of medication management among older adults who live on their own, however, also presents some limitations. A limitation of the methodology is that findings cannot be generalized to the

broader population, as, in addition to small sample sizes, the aim of a qualitative descriptive approach is to understand the experiences of the research participants (Sandelowski, 2000). Although the research study did not exclude any participants of any socioeconomic class or culture, it was required that all participants be fluent in English. Various ethnic origins are prevalent in the population within the communities where three of the participants were recruited from: approximately half of the populations are of Asian ethnicity (Statistics Canada, 2017). Future research ought to address cultural and language barriers affecting recruitment and participation. It is also important to recognize that language and culture are two challenges that independently increase the risk of poor medication management in socially isolated older adults and these were not addressed in this study (Ahmed et al., 2015; Singleton & Krause, 2009).

The focus of the research study was not to determine if there was a correlation between social isolation and medication management among community-dwelling older adults. Further research is required to determine if a dependent relationship exists between the two concepts. The cross-sectional design of the study also does not provide opportunity to understand the long-term effects of medication management and decreased social support on health outcomes. Previous research indicates that 20% of older adults experience adverse effects after being discharged from hospital; more than 60% of those events are related to poor medication management (Godfrey et al., 2013). A case study or longitudinal study could provide insight into the effects of decreased social support on health outcomes.

Strengths

The knowledge gained from the study is the first step in raising awareness of the experiences of medication management among socially isolated, community-dwelling older adults through using the natural language of the participants. This research methodology is especially effective in examining experiences of health and illness as it uses the participants' own words, without drawing inferences from the data. The data was also not forced to conform to a specific philosophy or theory, which may result in losing the meaning of the participants' own experiences. Most importantly, the results draw attention to how medication management and social supports are further influenced by health practices and beliefs, and relationships with primary care providers or healthcare resources. The interviews with each participant portrayed both unique and shared experiences among the participants. These experiences were significantly influenced by the participants' level of independence, varying co-morbidities or illnesses, and coping mechanisms. Lastly, the results provide foundational knowledge and insight into various challenges older adults face in community when trying to manage their health. Future research could add to the findings and explore language and culture on medication management among socially isolated older adults, health outcomes, or the impact of personal health beliefs on social relationships and medication management.

Trustworthiness and Quality of the Research

The methods mentioned in Chapter 4 were followed to ensure trustworthiness, such as researcher reflexivity, accurate description using the natural language of the participants, and data representation. Reflexivity was demonstrated through acknowledging my role as a healthcare provider in community, my role as a researcher,

and to keep the roles separate during the interview. Member checking would have further supported trustworthiness in the research; however, no participants verbalized wanting a follow-up interview or to review findings when asked.

Dissemination of Findings

The manuscript will be adapted and submitted to a journal for consideration of publication. Participants who requested the results of the study will be provided with the final written report. Findings will also be made available to the community health centres where the study was advertised. The research will also be shared with healthcare providers within the health organization through the annual research forum and the organization's research institute. Lastly, the results will be shared with the university. The dissemination plan ensures that the study will be shared with community-dwelling older adults and healthcare providers in various healthcare settings as addressing barriers to the health of older adults requires a multidisciplinary and collaborative approach.

Conclusion

This study determined that the experiences of medication management among socially isolated community dwelling older adults were influenced by complexity of managing medications, variations in how social relationships are conceptualized, managing healthcare resources, and personal health practices and beliefs. Participants identified that social support such as a spouse or partner could assist with medication management, and that managing multiple medications and medication regimens was the most difficult as an older adult living alone. All participants commented on how their social support networks had changed with aging. For 2 of the 5 participants managing chronic pain was specifically influential to their experiences of medication management

as a socially isolated older adult. For the 2 participants residing in rural communities, distance to healthcare resources was also highlighted in their experiences. Lastly all participants reported positive relationships with healthcare providers and saw them as a resource to help manage concerns related to medications.

Existing research emphasizes that a community-based approach is required to resolve challenges associated with medication management among socially isolated community-dwelling older adults (Government of Canada, 2018; Longman et al., 2012; Nicholson, 2011; Valtorta& Hanratty, 2018). Although both medication management and social isolation are two challenges unquestionably affecting the health of community-dwelling older adults, there is insufficient research that examines how medication is managed in the midst of social isolation. The research findings demonstrate that the experiences of older adults in managing their medications when socially isolated is further influenced by healthcare resources, primary care providers, and individual healthcare practices and beliefs. The chosen methodology was appropriate as it presents the findings using the natural words to explain the unique experiences of the participants. The research informs both older adults and healthcare providers of the potential challenges of managing medications with a lack of social supports so that barriers impeding medication management can be identified and mitigated.

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Appendix A: Recruitment Poster

PARTICIPANTS NEEDED FOR RESEARCH

MEDICATION MANAGEMENT IN SOCIALLY ISOLATED COMMUNITY-DWELLING OLDER ADULTS

Looking for volunteers to take part in a study examining the experiences of medication management among socially isolated older adults in the community

As a participant in this study you would be asked to participate in an interview approximately 40-60 minutes to discuss your ability to manage medications with a lack of social relationships or supports.

By participating you will help us to understand the experiences of older adults living in the community who lack social supports and manage medications.

To learn more about this study, or to participate please contact:

Principal Investigator:
Andrea Pomeroy, Masters of Nursing student*, Athabasca University*
(778)987-9246 or emailAndrea.Pomeroy@vch.ca

This study is supervised by: ***Dr. Annette Lane***alane@athabascau.ca

(587)755-1400

This study has been reviewed by the Athabasca University Research Ethics Board, and the UBC Office of Research Ethics

Athabasca University

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Appendix B: Invitation to Participants

INVITATION TO PARTICIPATE

Experiences of Medication Management Among Socially Isolated Community-dwelling Older Adults

Principal Investigator (Researcher):
***Andrea Pomeroy* BN,RN**
Centre for Nursing and Health Studies
Athabasca University
Andrea.Pomeroy@vch.ca
(778)987-9246

Supervisor:
Dr. Annette Lane
Faculty of Health Disciplines
Centre for Nursing and Health Studies
Athabasca University
alane@athabascau.com
(587)755-1400

My name is Andrea Pomeroy and I am a Master's of Nursing student at Athabasca University. As a requirement to complete my degree, I am conducting a research project about the experiences of medication management among socially isolated community-dwelling older adults. I am conducting this project under the supervision of Dr. Annette Lane.

I invite you to participate in this project because you are an older adult living independently in the community, who has identified as having a lack of social supports and manage multiple medications. The purpose of this research project is to understand your experiences of medication management as a community-dwelling older adult with a lack of social supports.

Your participation in this project would involve participating interviews with me about your experiences of social isolation and medication management. The questions will be open ended questions, and you are encouraged to add additional details or information not addressed by the questions. The interviews will last approximately 40-60 minutes, and arranged for a time and place that is convenient for you. An audio recorder will be used to limit note taking during the interview. There will be opportunity for a follow-up meeting if you would like to review your interview, and provide additional comments or questions. The information obtained through the interviews will be compared with other participants' interviews to try and identify similarities and themes in understanding your experiences of social isolation and medication management as an older adult living independently in community.

The research aims to improve awareness of healthcare providers working with the older adult population of the experiences of social isolation and medication management to improve practice. Healthcare providers can use the research to assess for social supports when prescribing medication and treatment regimens, and help identify factors that may make it difficult for you to follow medication instructions. The results of the research can

also encourage older adults to inform their healthcare providers when social support is limited.

Thank you for considering this invitation. If you have any questions or would like more information, please contact me, **Andrea Pomeroy by e-mail Andrea.Pomeroy@vch.ca , or by phone (778)987-9246;** or my supervisor **Dr. Annette Lane by alane@athabascau.ca or (587)755-1400.**

Sincerely,

Andrea Pomeroy, BN, RN

This project has been reviewed by the Athabasca University (AU) Research Ethics Board, and the UBC Office of Research Ethics. Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the AU Office of Research Ethics at 1-800-788-9041, ext. 6718 or by e-mail to rebsec@athabascau.ca; or UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Appendix C: Participant Consent Form

PARTICIPANT CONSENT FORM
Experiences of Medication Management among Socially Isolated Community-dwelling Older Adults

Principal Investigator (Researcher):
***Andrea Pomeroy* BN,RN**
Centre for Nursing and Health Studies
Athabasca University
Andrea.Pomeroy@vhc.ca
(778)987-9246

Supervisor:
Dr. Annette Lane
Faculty of Health Disciplines
Centre for Nursing and Health Studies
Athabasca University
alane@athabascau.com
(587)755-1400

My name is Andrea Pomeroy and I am a Master's of Nursing student at Athabasca University. As a requirement to complete my degree I am conducting a research project about the experiences of medication management among socially isolated community-dwelling older adults. I am conducting this project under the supervision of Dr. Annette Lane.

I invite you to participate in this project because you are an older adult living independently in community who has identified as having a lack of social supports, and managing multiple medications.

Purpose of Study

The purpose of this research project is to understand your experiences of medication management as a community-dwelling older adult who lack social supports and relationships. This letter is to inform you about your role as a participant in the study before providing written consent. The benefits and risks of participating will be outlined, as well as how the study's results will be used and shared.

Who can Participate

Older adults above the age of 70 who live independently, have limited social supports such as family members and friends, and manage medications are invited to participate. Participants must be able to speak and understand English, and not be diagnosed with Alzheimer's disease or other dementias by your doctor.

Study Design

Your participation in this project would involve participating in interviews with myself, about your experiences of social isolation and medication management. The questions will be open ended questions, and you are encouraged to add additional details or information not addressed by the questions. The interviews will last approximately 40-60 minutes, and will be arranged for a time and place that is convenient for you. An audio recorder will be used to limit note taking during the interview. There will be opportunity for a follow-up meeting if you would like to review your interview, and provide additional comments or questions. The information obtained through the interviews will

be compared with other participants' interviews to try and identify similarities and themes in understanding your experiences of social isolation and medication management as an older adult living independently in community.

Confidentiality
The interviews and conversations discussed in the interviews will be confidential, your name or any personal identifiable information will not be used. Transcripts of the audio recording will be labeled with a number so as not to identify you. Some quotations from the interviews may be used in the write up but will not identify you in any way.

Benefits of the Study
The research aims to improve awareness of healthcare providers working with the older adult population of the experiences of social isolation and medication management to improve practice. Healthcare providers can use the research to assess for social supports when prescribing medication and treatment regimens, and help identify factors that may make it difficult for you to follow medication instructions. The results of the research can also encourage older adults to inform their healthcare providers when social support is limited. To thank you for your participation in the study you will be presented with a $25 Save on Foods gift card.

Possible Risks
I do not anticipate that there will be any significant risks as a result of the study. Sometimes talking about experiences of your health may generate feelings of frustration, sadness, or anger. If this happens please feel free to inform me so I can help connect you with necessary resources. I will also provide you with information on services and supports within your community. If the interview becomes too difficult you may stop or withdraw from the study at any time.

This study has been reviewed by the Athabasca University (AU) Research Ethics Board and the UBC Office of Research Ethics. Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the AU Office of Research Ethics at 1-800-788-9041, ext. 6718 or by e-mail to rebsec@athabascau.ca; or UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

If you have any questions or would like more information, please contact me, **Andrea Pomeroy** (the principal investigator) **at e-mail Andrea.Pomeroy@vch.ca or by phone (778)987-9246**; or my supervisor **Dr. Annette Lane at alane@athabascau.ca or (587)755-1400.**

Sincerely, Andrea Pomeroy, BN RN

Athabasca University

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CONSENT:
I have read the Letter of Information regarding this research study, and all my questions have been answered to my satisfaction. I will keep a copy of this letter for my records.

My signature below confirms that:

- I understand the expectations and requirements of my participation in the study;
- I have received and read the information letter
- I understand that I will be interviewed about my experiences of medication management and social isolation
- I understand the provisions around confidentiality and anonymity;
- I understand the risks and benefits of taking part in the research study
- I understand that my participation is voluntary, and that I am free to withdraw at any time with no negative consequences;
- I am aware that I may contact the researcher, Andrea Pomeroy, Supervisor Dr. Annette Lane, or the Office of Research Ethics if I have any questions, concerns or complaints about the research procedures;
- The results of the study will be shared with faculty and students of Athabasca University, and healthcare staff of Vancouver Coastal Health
- Results of the study will be made accessible to research journals for other research purpose

Name: _____ Date: _____
Signature: _____

By initialing the statement(s) below,

_____I am granting permission for the researcher to use an audio recorder
_____I acknowledge that the researcher may use specific quotations of mine, without identifying me
_____I would like to receive a copy of the results of this research study by:

E-mail address:_____
or mailing address:_____

If you are willing to have the researcher contact you at a later time by e-mail or telephone for a brief conversation to confirm that I have accurately understood your comments in the interview, please indicate so below. You will not be contacted more than six months after your interview.

_____ Yes, I would be willing to be contacted

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Appendix D: Interview Questions

1. Can you tell me about yourself?
2. What have been your experiences of managing your medications by yourself?
3. Do you feel there are any positive aspects of managing your medications by yourself?
4. What challenges have you encountered?
5. How have you attempted to deal with these challenges?
6. Describe your social supports or social interactions, have these changed over the years?
7. How has managing your medications affected your life?
8. What are your greatest concerns regarding your current situation?
9. What do you think would help resolve or address some of your concerns?

Appendix E: Participant Initial Themes

Table 2

Participant 1: Initial Themes

Frequency and Forgetting Medications
- Medications for back pain, prostate, blood pressure, overactive bladder, and uneasiness - "Requires a lot of monitoring" - Frequency of medications 2-4 times a day - Wife would remind him, he "just forgets", too frequently - Remembers medical appointments, hard to remember taking pills multiple times a day - Uses a pill organizer but not always helpful - No recent changes to medications in last 6 months - Reviews concerns with GP - Adverse effects: light-headedness nausea/upset stomach, hard to distinguish from illness
Limited Access to Resources
- Greatest difficulty living in rural area to manage health concerns - One pharmacy and one doctor located between several communities - Hard to get an appointment, Sometimes uses hospital to manage health concerns - Still drives, wonders if he is "safe to drive" and when he no longer can - Would not relocate for access to improved resources
Health System Challenges
- Uses hospital to manage health concerns - Limited access to GP - "Health care system stretched", "you get what you pay for" - Resources dried up" - Need more home support - Many seniors cannot drive, need to plan for appointments - Limited access to CHN in rural community, hour drive to community. "Can only check in with you" but cannot spend a significant amount of time with people
Impact of Chronic Pain
- Chronic back pain related to job - Does not take pain meds unless "absolutely needs to" - Tries non- pharmaceutical methods: heat, gels, physical activity - Sees doctor every 6 months, discusses pain - Pain medications "taking a gamble", "makes you worse off" - Would not have worked in the trades if he knew how much pain he would be in
Distant Social Support - Lived on his own for 15 years, divorced - Three children, moved to bigger cities - Children have families too - "They will know when it's time to spend more time with me" - Kids try to visit him - Wife would remind him to take pills if she was around Likes solitude, "stuck in own ways" - Does not see coworkers now that he has retired

Personal Health Beliefs
- Wants to share experiences as a senior in a rural community - Health issues part of getting old - Would not give up where he lives for improved access to resources - Likes solitude of rural community - Challenging stage of life - "Time becomes a very precious commodity" - Only takes medications when he needs to - Worries if he is safe to drive at his age -"proud person" - Feels guilty for calling on his kids

Table 3

Participant 2: Initial Themes

Managing Frequent Changes to Medications
- Two medications over five years for hypertension and high cholesterol - Reports no side effects, but "does not feel good mentally" - Experienced stopping and restarting of medications - "Medications won't solve problem but will help" - Calls GP to ask questions about medications, "sometimes weekly" - Complicated to know how many pills to take daily - "Hard to control, depends on condition that day" - Takes pills from bottles, does not use a pill organizer - Finds medication dose and time changes confusing - Diet and exercise can help but "best to take medications for illness "
Self-management and Health Practices
- Taking medications does not make him feel good mentally - Did not know he had hypertension, chronic issue cannot be cured but believes medications help - Believes health conditions are genetic - Follows doctor's advice "trust him when he says there is some conditions abnormal" - Managing medications and blood pressure depends on condition that day - Wants to remain in home even though limited access to resources - "Do not like too many complications", prefers living in rural community - Sees GP as decision maker, trusts GP - "Very specialized and knowledgeable, and experienced so I trust him" - Follows diet advice to help blood pressure but believes taking medications still better - Still exercises
Social Support in Rural Community
- Moved to rural community ten years ago - Son lives in urban city, sometimes visits once a month - Good relationship with GP - Same GP since moving to rural community - Receives no help - Makes phone calls to family doctor for questions about medications, "sometimes weekly" - Sends messages to son on Google chat if he has a problem - Does his own shopping and run errands - Cannot drive all the time due to doctor's orders and BP - Has not planned for future but says his son will help him if he needs more help
Limited Access to Resources
- Less population in community so believes medical facilities are not as modern - Less access to clinics and hospitals - Receives no help - Does his own shopping and runs errands as he still drives - Not aware of resources such as visiting nurses but thinks there are "some services, servicing ladies who go to people's homes at certain times of the day"

Table 4

Participant 3: Initial Themes

Taking Medication As Prescribed
- Imodium, vitamins, and Tylenol, diuretics, and occasional prescription for antibiotic - Diuretics did not help so stopped taking them - Tylenol to help with sleep but does not work; continues to take - Has tried naturopathic medications for sleep, doctor does not approve - GP not keen on her taking Imodium daily, but has good effects so continues to take it - Worries most about multiple drug allergies - Believes GP should know what she is taking - Manages medications in bottles
Relationship with GP
- Goes to GP for any medication related questions - Does not always follow recommendations but always forthcoming with GP in telling them what you are taking - Medical exam every 2 years for driving - Good relationship with GP, same GP for ten years - "Highly respected and regarded by his patients" - Did not want operation to improve swallowing as per recommendation of doctor - "Sit and chat, you're not answering questions that you think you might be answering"
Reflections of Health Decisions
- Believes she is very fortunate to have good health - Cognitive functioning important to her - Views of medications "Sometimes side effects are worse than what is wrong with you" - Still drives but not at night, knows she will not be able to drive one day - Diverticulum in throat, cautious of food she eats, but did not follow recommendations by GP to have operation done - Views on when her mother was alone "Now that I am elderly, should I have been doing more, and same for an aunt" - "I am happy in a wheelchair as long as I know I am in a wheelchair and why I am there" - "Should be wearing a bracelet but I don't"
Independence and Social Relationships
- Drives to own appointments, shopping, and errands - Four years since husband passed away - A lot of family in Toronto - "Not very good in participating in social activities" - Independent - Moved into new apartment to keep busy after husband died, "helped considerably" with grieving process - Regret now when mother lived on her own, did she do enough, should she have done more, same for elderly aunt
Previously a Caregiver
- Four years since husband passed away and has lived alone - Bought apartment before husband died

- Helped to manage move to new apartment after husband passed away to help with grieving
- Husband suffered from COPD and heart condition
- Managed husband's side effects from medications
- Recognized when husband started to become ill
- Traveled every year in winter but stopped when husband got ill "wasn't worth the gamble"
- Repeated hospital admissions before husband passed away

Table 5

Participant 4: Initial Themes

Challenges with Managing Polypharmacy
- One medication to eight in only a few months - Managed BP and cholesterol with diet and exercise so would not need medications - Referred to cardiologist and atrial fibrillation clinic - Multiple prescribers - Trusts cardiologist and new medication regimen - Difficulty managing number of new medications, and frequency - Uses pill organizer, fills every Sunday - Reports minor side effects - Reads pamphlets from pharmacy - Sees GP to be monitored for side effects from many new medications - Disciplined so he does not get confused - If wife was around, she would help him, people need this support
Multiple Prescribers
- Multiple GPs over a few of years "Lost continuation, or feeling there was somebody there that knew what I was doing" - Referred to atrial fibrillation clinic, orthopedic surgeon, and cardiologist - Controlled blood sugar and cholesterol with weight management to avoid medications, monitored by GP - Blood thinner contributed complications related to fall - Though cardiologist was bold in starting so many medications and felt GP should be made aware of new medication regimen - Appreciated support from GP for frequent monitoring of new medications and possible side effects"
Relationships with Other Seniors
- Originally from Scotland - Moved to Canada with his wife when he was 23, no family - Had a son very late in life - Adjustment to live alone, wife died 14 years ago - Occasional housekeeper - Son travels for work most of the year - Friend from Island supported him for a few days after a fall sustained a few months ago - Distanced himself from older friends (other seniors), nothing in common, he has "too much to live for" - "I don't even have to walk the dog, you better get something, you don't have to do a single thing, nobody knows you're alive or dead, nobody really cares" - Self taught education to stimulate mind
Coping Mechanisms
- Signed up for online courses to stimulate mind - "Trying to increase the feeling of happiness, boost compassion and emotional intelligence factors" and "….increase ability to focus, but you have to work at it" - "There must be a reason you get up and go every day" for me its curiosity" - "If you're not curious you're dying"

"As people get older they just keep shrinking their focus"
Maintaining Independence
- Eats out two to three nights a week at a restaurant for dinner and lunch - Still drives - Relies on technology - "You can talk yourself into not doing things, one of the big traps about getting older" - "When you're alone you have to tell yourself" - Helps him know he is still capable - States he needs to be self- disciplined in managing medication regimen - Does not want to end up in a nursing home

Table 6

Participant 5: Initial Themes

Multiple Medications and Co-Morbidities
- Chronic disease and multiple co-morbidities - Goes to pharmacist for questions regarding medications or looks things up on computer - Multiple pain medications - Side effects from Tylenol 3, makes her "head buzz" - Aware of health but not always aware of which medications are for what condition - Has experienced many medication changes and doses - Multiple prescribers - Not good at remembering to take medications so has pharmacy blister pack them - Fifteen medications, and inhalers - Does not remember inhalers as prescribed - Does not want to take medications for depression - Gets mad at herself for forgetting to take medications
Impact of Uncontrolled Pain
- Tried multiple pain medications but did not work - Chronic knee pain and neuropathy from history of cancer treatment - Takes Tylenol Arthritis and Tylenol 3, and CBD oil regularly - GP does not approve how she takes pain medication - In constant pain "almost 24/7" - Registered to attend pain clinic for cortisone shot or gel in knee - Prescribed brace but too expensive - Limited mobility due to pain - Looking into scooter to help ambulate
Difficulty Coping with Health Issues
- Health not great, overweight, - Mobility issues -"I'm getting older and more decrepit" - Does not take pain medication as recommended - Considers her health "too far gone" - Adverse effects from chemo on her body - Knows she does not remember medications so has them blister packed - Does not agree with all decisions of her doctor: sleep apnea test, GP canceled pain clinic appointment - Was going to counseling but quit last year because did not find it helpful - Stress from adopted son, does not see him - Difficulty coping with limited mobility, cannot get out - Gets mad at herself for forgetting to take medications
Multiple Care Providers to Manage Health
- Sleep apnea clinic - Lung specialist - Referral to COPD clinic - Cardiologist - Eye Doctor - Community healthcare providers

- Referral to dietician - Osteoarthritis Clinic - Orthopedic doctor - Dermatologist - Pain clinic - Uses calendar / day planner to schedule medical appointments - Relies on Handy Dart - GP was retiring, needed to find another GP - Life Line - Better Meals delivery
Challenges with Socializing
- Relies on Handy-Dart - Divorced, second partner passed away - Reconnected with ex-husband who also passed away - Moved many times - Brother passed away - Challenges with adopted son, results in stress and depression - Did belong to the board of directors at senior centre but was not voted back in - Better meal delivery, cannot cook own meals - Currently not receiving home support - Decreased mobility and pain contributes to isolation - Pain decreases ability to get out, wishes she could go for walk outside - Dreams she has better mobility and she could get out walking

Appendix F: Superior Themes

Table 7

Superior Themes

Complexity of Managing Medications
- Frequency and Forgetting Medications - Managing Frequent Changes to Medications - Medications and Health Practices - Taking Medications as Prescribed - Managing Polypharmacy - Multiple Medications and Co-morbidities
Variations in how Social Relationships are Conceptualized
- Distant Social Support - Social Support in Rural Communities - Independence and Social Relationships - Previously a Caregiver - Challenges of Relationships with Other Seniors - Challenges with Socializing
Managing Healthcare Resources
- Limited Access to Resources - Health System Challenges - Limited Access to Resources - Relationship with GP - Multiple Prescribers - Multiple Care Providers to Manage Health
Personal Health Practices and Beliefs
- Personal Health Beliefs - Self-management and Health Practices - Reflections of Health Decisions - Coping Mechanisms - Maintaining Independence - Difficulty Coping with Health Issues **Impact of Pain** - Impact of Chronic Pain - Impact of Uncontrolled Pain

Appendix G: Ethics Approval

Athabasca University
RESEARCH CENTRE

CERTIFICATION OF ETHICAL APPROVAL

The Athabasca University Research Ethics Board (REB) has reviewed and approved the research project noted below. The REB is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2) and Athabasca University Policy and Procedures.

Ethics File No.: **23743**

Principal Investigator:
Ms. Andrea Pomeroy, Graduate Student
Faculty of Health Disciplines\Master of Nursing

Supervisor:
Dr. Annette Lane (Supervisor)

Project Title:
Experiences of Medication Management Among Socially Isolated Community-dwelling Older Adults: a Qualitative Descriptive Approach

Effective Date: January 06, 2020 **Expiry Date**: January 05, 2021

Restrictions:

Any modification or amendment to the approved research must be submitted to the AUREB for approval.

Ethical approval is valid *for a period of one year*. An annual request for renewal must be submitted and approved by the above expiry date if a project is ongoing beyond one year.

A Project Completion (Final) Report must be submitted when the research is complete *(i.e. all participant contact and data collection is concluded, no follow-up with participants is anticipated and findings have been made available/provided to participants (if applicable))* or the research is terminated.

Approved by: **Date: January 07, 2020**

Karen Cook, Acting Chair
Faculty of Health Disciplines, Departmental Ethics Review Committee

Athabasca University Research Ethics Board
University Research Services, Research Centre
1 University Drive, Athabasca AB Canada T9S 3A3
E-mail rebsec@athabascau.ca
Telephone: 780.675.6718

Ethics Approval Continued

The University of British Columbia
Office of Research Ethics
Behavioural Research Ethics Board
Suite 102, 6190 Agronomy Road, Vancouver, B.C. V6T 1Z3

CERTIFICATE OF APPROVAL - MINIMAL RISK

PRINCIPAL INVESTIGATOR:	INSTITUTION / DEPARTMENT:	UBC BREB NUMBER:
Andrea Pomeroy	VCHA/VCHRI	H19-04016

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:

Institution	Site
Vancouver Coastal Health (VCHRI/VCHA)	Richmond Health Services
Vancouver Coastal Health (VCHRI/VCHA)	Vancouver Community

Other locations where the research will be conducted:
Vancouver Community and Richmond Home Health will be used for recruiting participants, but all interviews for the research to be conducted within participants' home

CO-INVESTIGATOR(S):
N/A

SPONSORING AGENCIES:
N/A

PROJECT TITLE:
Experiences of Medication Management Among Socially Isolated Community-dwelling Older Adults: A Qualitative Descriptive Approach

CERTIFICATE EXPIRY DATE: January 9, 2021

DOCUMENTS INCLUDED IN THIS APPROVAL: **DATE APPROVED: January 9, 2020**

Document Name	Version	Date
Consent Forms:		
Consent Letter	3	January 8, 2020
Advertisements:		
Version 2 Poster	2	December 23, 2019
Questionnaire, Questionnaire Cover Letter, Tests:		
Version 2 Questionnaire	2	December 23, 2019
Letter of Initial Contact:		
Version 2 Invitation to Participate	2	December 23, 2019
Other Documents:		
VCH Richmond Seniors Resource	1	December 23, 2019
BC Seniors Guide 11th Edition	1	December 23, 2019
Athabasca University Research Ethics Board Certificate	1	January 8, 2020
Research Proposal References	N/A	December 18, 2019
Tri Council Certificate	N/A	December 18, 2019
Other:		
n/a		

The application for ethical review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.

This study has been approved either by the full Behavioural REB or by

an authorized delegated reviewer