Self-Management Approaches and Life Space Mobility of South Asian Older Immigrant Women with Osteoarthritis in Edmonton, Canada

by

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Abstract

This study aimed to explore how osteoarthritis (OA) affects the self-management and life-space mobility (LSM) experiences of older South Asian (SA) immigrant women with OA in Edmonton, Canada. Self-management is what people with chronic diseases do on a daily basis to feel better and pursue the life they desire. Life space mobility means how much and how far someone can move around in their everyday life, like going to different places or doing activities outside of their home. It shows how freely they can move and what places they can easily reach. Immigrants often confront challenges such as language barriers, low socioeconomic status, and limited access to healthcare. Global migration and the increased burden of non-communicable diseases highlight the urgent need to explore how older immigrant women navigate self-management of chronic health conditions alongside challenges in mobility. This study utilized a qualitative descriptive approach that involved individual sitting and walk-along interviews with 12 SA older immigrant women with OA living in Edmonton. Sitting interviews provided valuable opportunity to thoroughly explore their experiences in managing OA and its impact on their LSM. Walk-along interviews offered a dynamic platform for understanding participants' mobility experiences in real-world settings.

The findings from these interviews illuminated the self-management experiences of older SA immigrant women living with OA. Participants described how OA symptoms, such as joint pain and stiffness, impacted their ability to engage in mobility-related activities across different life-space zones and how they managed to reduce the severity of these symptoms. Additionally, participants highlighted the challenges they faced in accessing healthcare services due to immigration status and expressed a lack of sufficient health literacy to effectively manage their OA. It is important to address the neglected needs of this population.

Preface

This thesis is an original work by Saba Un Nisa. The research conducted for this thesis stems from a research collaboration led by Dr. Jordana Salma (supervisor) and co-led by Dr. Allyson Jones (committee member) at the University of Alberta. The research project of which this dissertation is a part received research ethics approval from the University of Alberta Research Ethics Board, Project Name "Edmonton Neighborhood Study (ENS)" Ethics # Pro00123689).

This thesis has four chapters. Chapter one provides an introduction, including a literature review, background information, and the purpose of the study, along with a summary of self-management and LSM experiences among older SA immigrant women with OA in Edmonton, Canada.

Chapter two of this thesis is a manuscript submitted and under review as Saba Un Nisa, Jordana Salma, & Allyson Jones. (2024), Leading walk-along interviews with older immigrant women: A graduate student experience, *International Journal of Qualitative Methods.* In this paper, I discuss the methodology of walk-along and sitting interviews, which were utilized to conduct interviews with the participants in this study. I was responsible for the data collection, data extraction and analysis, manuscript composition, writing, submission, and response to edits from peer reviewers. Dr. Salma and Dr. Jones contributed to conceptualizing the study, manuscript composition, and edits at various stages of manuscript construction. Dr. Salma was the supervisory author on this manuscript and contributed to the overall concept formation, composition and edits of this manuscript. All authors contributed to the conceptualization and defining methods for this study.

Chapter three of this paper discusses the findings of the thesis, i.e., self-management experiences of older SA immigrant women in Edmonton, Canada, as they navigate challenges related to OA management and accessing healthcare. All authors (Saba Un Nisa, Jordana Salma, & Allyson Jones) contributed to the conceptualization and defining methods for this study. Chapter four of this paper focusses on a discussion of the comprehensive synthesis of the research findings, including providing a summary, drawing conclusions, and offering actionable recommendations. Moreover, the significance of this study within the nursing domain is elucidated, along with its implications for practice, policy, and future research endeavors.

Dedication

I dedicate this thesis to my mother (late), her belief in my abilities and her constant encouragement that propelled me forward, even in the face of adversity. Though she is no longer with me, her presence and influence continue to inspire me every day. This dissertation is a tribute to her memory and the profound impact she has had on my life.

To my father, my sister and my husband, your unwavering support, guidance, and love have been my guiding light throughout this journey.

To my brother, whose unwavering financial support and encouragement have been indispensable throughout my academic pursuit, you have shown me the true meaning of familial love and support.

To my supervisor, your mentorship has not only enriched my research but has also inspired me to strive for excellence in all aspects of my work. With deepest gratitude and appreciation, this thesis is dedicated to you for your invaluable mentorship and support.

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I gratefully acknowledge the financial support of the Canadian Institutes of Health Research that funded the Edmonton Neighborhood Study (*Promoting Outdoor Mobility via Enhancing Neighborhood Walkability for Racialized Older* Women*: A Community-Based Participatory Project. CIHR Project Grant*). This funding was crucial for the successful completion of this project, and I appreciate their commitment to advancing health research.

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Glossary of Terms

Immigrant: Refers to a person who is, or has been, a landed immigrant or permanent resident. Immigrants who have obtained Canadian citizenship by naturalization are included in this group (Statistics of Canada, 2022).

South Asian: South Asians trace their origins to South Asia, which includes India, Pakistan, Bangladesh and Sri Lanka (The Canadian Encyclopedia, 2020).

Mobility: Defined as the ability to move independently around the environment (Shumway-Cook et al., 2005).

Self-Management: The individual's ability to manage the symptoms, treatment, physical and psychological consequences and lifestyle changes inherent in living with a chronic condition (Barlow et al., 2002).

Life-Space Mobility: Life-space mobility can be described as movement through different mobility zones that expand from home to areas beyond one's town/community or region (Lech et al., 2023).

Older adults: 60+ years to refer to the older population (United Nations, 2001).

Osteoarthritis: Degenerative joint disease, often called "wear and tear" arthritis. It occurs most frequently in the hands, hips, and knees (Centre for Disease Control & Prevention, 2020).

Physical Activity: Physical activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure (Caspersen & Christenson, 1985).

Sedentary Lifestyle: A sedentary lifestyle refers to activities that do not increase energy expenditure substantially above the resting level and includes activities such as sleeping, sitting, lying down, watching television, and other forms of screen-based entertainment (Pate et al., 2008)**.**

Chapter 1. Introduction

In this chapter, I will discuss the significance of self-management in addressing chronic conditions such as osteoarthritis (OA) among older South Asian (SA) immigrant women in Canada. Self-management strategies play a crucial role in empowering individuals to navigate challenges such as settlement in a new country and coping with chronic diseases like OA. Moreover, I will also discuss the concept of life-space mobility (LSM) and its significance in the lives of older adults, highlighting how it intersects with the self-management experiences of older immigrants. The chapter establishes the rationale for conducting this study and underscores its importance in addressing self-management of chronic diseases including OA and mobility-related concerns among older SA immigrant women in Canada.

Background

Canada is a multicultural society with a long history of immigration. In 2021, one in four people migrated to Canada, making up 23% of the nation's population (Government of Canada, 2021). Although the largest source of immigrants is Asia, there is also an increasing number of recent immigrants from Africa, the Caribbean, and Central/South America (Government of Canada, 2021). Older adult refers to a person who is 60 years or above (United Nations, 2001). According to Statistics Canada (2023), in 2022, 3.9 million people in Canada, or 19% of the population, were 65 years or older. Of this older adult population, 30% were foreign-born. According to Employment and Social Development Canada (2022), the expected increase in the older adults is 22.5 % in 2030. Due to the demographic changes in the Western world, healthy aging has become an important issue for policymakers and healthcare providers to manage healthcare costs, economic impacts, and quality of life among older adults effectively (Freiberger et al., 2020). The World Health Organization (WHO) defines healthy aging "as the process of

developing and maintaining the functional ability that enables well-being in older age" (WHO, 2015, p.28). A critical component of healthy aging is mobility.

Mobility is critical for older adults to maintain an independent lifestyle and preserve physical and psychological health (Rantakokko et al., 2013; Rantanen et al., 2014). Restricted movement around their environment can lead to a loss of mobility and a decline in quality of life for older adults (Nightingale et al., 2021). Functional limitations, such as difficulties in walking, moving, and climbing stairs, can significantly challenge approximately 35% of older adults (Bizier et al., 2012; Cummings et al., 2014; Musich et al., 2018). If these functional limitations are not controlled, it can lead to mobility disability.

According to the Centers for Disease Control and Prevention (2020), disability is a condition of the body or mind that makes it challenging for individuals to perform certain activities and engage with the world around them. Disability is often associated with the inability to carry out basic self-care activities, known as activities of daily living (ADLs), without assistance (Amegbor et al., 2018). Disability can be measured by limitations in ADLs, such as bathing, feeding, and dressing oneself (Mlinac & Feng, 2016). Among older adults aged 65 to74 years of age, approximately one-third reported having a disability and requiring long-term care in the United States (Freedman & Spillman, 2014). The rate of disability in Canada has increased since 2017. In 2017, 22% of Canadians, or 6.2 million people, had one or more disabilities, and by 2022, this number had risen to 8 million people (Statistics Canada, 2023). Families with at least one person with a disability face additional costs exceeding $7000 annually, including expenses for medications and essential paramedical care and services (Gupta et al., 2019). Moreover, around 9.6% of Canadians have a mobility disability, with musculoskeletal disorders being a leading cause, causing pain and reducing physical activity (Government of Canada,

2021). Women are more likely to report a disability and reside in long-term care (Newman et al., 2023) because they experience a faster decline in functional abilities with age, even when considering age-related factors such as chronic diseases, sensory impairments, and reduced physical activity (Hagg & Jylhava, 2021; Newman et al., 2023). Biological factors, such as hormonal changes and differences in body composition, may also influence women's susceptibility to specific health conditions and their progression (Mauvais-Jarvis et al., 2020). For example, estrogen has been shown to have protective effects on bone health, and the decline in estrogen levels during menopause may increase women's risk of developing OA and experiencing faster functional decline (Anagnostis et al., 2020).

Life-space mobility is a concept that refers to the area where people move daily, from being confined to one room to moving in the town and beyond, and incorporates the frequency and independence of moving around (Baker et al., 2003). Some older adults encounter difficulties performing ADLs, particularly self-care tasks such as eating, bathing, dressing and walking (Andreasen et al., 2015; Hestevik et al., 2019; Van Seben et al., 2019). Limited mobility in older adults can result from decreased intrinsic capacity, limited personal resources, and environmental barriers, leading to adverse health outcomes (Yu et al., 2021). Ensuring the LSM and safety of older adults is crucial, as limited LSM can lead to social isolation, depression, and loneliness (Haustein & Siren, 2015). Life-space mobility of SA older immigrant women has not been explored within the context of living with OA (Bains & Szto, 2020; Cunningham & Cunningham, 2020; Mahmood et al., 2022). Migration often changes the social capital that immigrant women have access to, their knowledge and comfort in their lived environments, and their resources to manage their health in a new cultural and linguistic setting. Some studies have addressed mobility issues among older adults, older immigrants, and SA women. These studies

identified that limited mobility among older adults is associated with adverse health outcomes and chronic diseases (Bernabei et al., 2022), while older immigrant women, especially SA, face health disparities, financial disadvantages, and barriers to accessing healthcare (Guruge et al., 2021). These populations also experience inadequate attention to their culturally specific health needs, resulting in inequitable treatment (Alvi & Zaidi, 2017).

Osteoarthritis is the most common type of arthritis, characterized by joint cartilage and bone breakdown (Poulet & Staines, 2016). Osteoarthritis is a leading cause of disability, affecting approximately 250 million individuals worldwide (Hunter, 2019; Safiri et al., 2020). Osteoarthritis is 3.9 % responsible for disability globally and is projected to become the fourth leading cause of disability worldwide in 2020 (Hunter, 2019). Osteoarthritis affects 8.9% of males and 10.8% of females in Canada (Kopec et al., 2022), with approximately 13% of Canadians experiencing significant pain and disability due to OA (Birtwhistle et al., 2015; Leite et al., 2011). Osteoarthritis can affect any joint, including the hands, spine, and shoulders, but is common in weight-bearing joints, the hips and knees (Cross et al., 2014). Although OA can affect individuals of all ages, it is more commonly found in females and older adults (Peshkova et al., 2022). Approximately 80% of individuals with any type of OA experience restricted movement and decreased function, and 25% cannot perform daily activities, leading to poor QoL (Atukorala & Hunter, 2023).

Older immigrants, especially women, are more vulnerable to health issues than younger immigrants and the non-immigrant population (Wang et al., 2019). Cultural barriers, chronic illnesses, limited spatial mobility, and low socioeconomic status significantly impact the health of older immigrant women (Subedi & Rosenberg, 2014). Older immigrant women face more significant health risks, financial disadvantages, and challenges in accessing healthcare than

Canadian-born women (Guruge et al., 2021). Moreover, chronic diseases such as OA can reduce their LSM, affecting their Health-Related Quality of Life (HRQoL) and increasing mortality risk (Martín-Fernández et al., 2020).

Self-management is considered an effective strategy for treating chronic diseases, including the treatment of OA (Uritani et al., 2021). Self-management, as defined by Barlow et al. (2002), refers to "the individual's ability to manage the symptoms, treatment, physical and psychological consequences and lifestyle changes inherent in living with a chronic condition" (p. 178). Self-management programs that encompass patient education and include a cognitive behavioural component is widely recommended and have been found to reduce pain (Eldar et al., 2017), enhance physical function (Rochfort et al., 2018) and increase self-efficacy (Lee et al., 2021). Unfortunately, many patients tend to pay little attention to managing and controlling diseases, lack the ability to self-manage, and cannot make the right decisions related to health (Guo et al., 2023; Wang et al., 2023). Cultural beliefs and norms among the SA population have great significance in managing their health and overall well-being. Studies with the SA immigrant population, especially women, indicate low rates of help-seeking behaviour from medical professionals and social groups (Sripada, 2020). In this population, the preference for traditional medication over Western approaches is prioritized for managing disease processes or chronic conditions (Ahmed et al., 2022; Jamil et al., 2022). However, women find it more comfortable to address their health matters with a female doctor who understands their culture and language (George et al., 2014).

Understanding the complexities of self-management and how OA impacts LSM among older SA immigrant women with OA is crucial for developing targeted interventions. Targeted interventions helps address specific needs and challenges faced by this population, leading to

more effective and personalized care. These interventions should focus on empowering individuals to proactively manage their condition, foster independence in daily activities, and mitigate the impact of OA on their quality of life. It is crucial to enhance culturally sensitive approaches that address unique barriers such as language barriers, cultural beliefs, and access to healthcare services. Moreover, recreation facilities and social gatherings need to be enhanced to maintain their LSM. The findings of this research can inform policy development aimed at improving healthcare access, reducing disparities, and addressing systemic barriers faced by older SA immigrant women with OA. This research uses a qualitative research methodology to explore the self-management experiences of older SA immigrant women navigating the challenges of OA and how it impacts their LSM.

Research Aim and Objectives

Overall aim: In this research, I aim to explore the self-management experiences and perspectives of older SA immigrant women with OA in Canada and how OA impacts their LSM. The research question for this study is, "How does OA influence the experiences of self-management and LSM among older SA immigrant women living with OA of the hip and knee in Edmonton, Canada?"

Specific Objectives

(1) Describe the self-management and LSM experiences of older SA immigrant women living with hip and/or knee OA in Edmonton, Alberta, Canada.

(2) Identify the impact of OA on older SA immigrant women's health.

(3) Explore barriers and facilitators to LSM in older SA immigrant women with OA.

Literature Review

In this section, I will review the existing literature on key themes central to this dissertation. Firstly, I will highlight the challenges faced by older SA immigrants in accessing healthcare services and self-management experiences in managing chronic diseases such as OA. Moreover, I will explore how OA impacts LSM among older adults. Utilizing the LSM framework (Webber at al., 2010), I will emphasize its importance in understanding the mobility patterns among older adults. Additionally, I intend to examine how LSM impacts QoL and HRQoL, specifically among older immigrant women. This comprehensive literature review establishes the theoretical and empirical foundation essential for subsequent analysis and discussion in this dissertation.

Older Immigrants and Health Services

Older immigrants face more challenges than the non-immigrant population during resettlement (Wang et al., 2019). Some older immigrants, such as refugees, newcomers, and those who immigrated post-retirement for family reunification, are socio-economically disadvantaged and have reduced access to employment (Morassaei et al., 2023). However, older immigrant women face greater vulnerability to poor health, financial disadvantages, and barriers to accessing necessary health services than Canadian-born women (Guruge et al., 2021). Low socioeconomic status influences older adults' access to health services (Wang et al., 2019). Cultural sensitivity and language barriers also hinder older adults' access to healthcare services (Alvi & Zaidi, 2017). These barriers to healthcare access could significantly impact older immigrants because of their chronic illnesses, decreasing LSM, and low socioeconomic status, which may further affect their health status (Subedi & Rosenberg, 2014). Issues related to poor health services by older immigrants include long waits in hospitals or doctors’ offices or the poor

and disrespectful treatment they receive from healthcare practitioners (Alvi & Zaidi, 2017). Additionally, minority ethno-cultural populations, whether immigrants or not, are disproportionately at high risk of poorly controlled OA (Kumar et al., 2015). Older immigrant women who are also ethno cultural minorities are at increased risk for adverse health outcomes; hence, focusing on their experiences of managing chronic illnesses in older age is critical as the immigrant population in Canada increases.

South Asian Immigrants and Chronic Disease Management

Chronic diseases often necessitate medical care and may restrict daily activities. They may contribute to disability in older immigrants and have a significant impact on morbidity and mortality (Centre for Disease Control and Prevention, 2023; Lukman & Merry, 2022). Living with and managing chronic diseases can be challenging (Van Houtum et al., 2013). Migration may pose additional barriers. Older immigrants may have better health and self-reported health status than the general population which is referred to as the healthy immigrant effect. Over time their health may decline due to various factors, including settlement challenges, acculturation pressure, economic hardship, discrimination, and a low understanding of the Canadian health system and services (Thapa-Bajgain et al., 2023). Some older immigrants are vulnerable and susceptible to developing chronic diseases when discrimination, language barriers, and unfamiliarity with the healthcare system impedes their access to resources for managing symptoms and preventing complications (Rechel, 2013; Wang & Kwak, 2015). Furthermore, cultural beliefs, values, low health literacy, low confidence can create additional barriers to immigrants' access to healthcare services (Riegel et al., 2012). For instance, health behaviors are influenced by their country of origin's cultural practices and beliefs (Osokpo et al., 2021). Immigrants often uphold traditional values and beliefs from their countries of origin (Dhatt et al.,

2012). These cultural norms can influence their expectations and approaches to managing chronic illnesses (Riegel et al., 2021).

South Asian immigrants in Canada experience unequal access to healthcare due to language barriers, low health literacy levels, and incidents of discrimination (Rechel et al., 2013). The lack of communication with healthcare professionals contributes to poor patient-centred care and unsatisfactory interactions among migrants from SA countries (Vakil et al., 2023). Difficulties understanding the language used by healthcare providers or written instructions for medication labels can result in poor communication and suboptimal clinical outcomes (Yoon et al., 2023). Moreover, doctors being too busy is another challenge older SA immigrants face in accessing appropriate healthcare services (Vakil et al., 2023). However, SA patients hesitate to express their preferences regarding healthcare and cultural needs to avoid conflicts with family members and healthcare providers (Khosla et al., 2017). Additionally, healthcare professionals' inadequate understanding and consideration of patients' cultures can result in stereotypes, alienation of minorities, misunderstandings about patient barriers to healthcare access, poor communication, and non-adherence to treatment (Brandenberger et al., 2019; Napier, 2015). These factors are barriers to accessing requisite healthcare services (Kumar et al., 2015; Sobrun-Maharaj et al., 2010).

Self-care is essential to chronic disease management, regardless of the illness (Grady & Gough, 2014). Religion and faith are important resources for coping with chronic disease and contributing to self-care among immigrants (Salma et al., 2018). Social support is another key consideration when exploring health management in this population. Immigrants in one study were reported to mainly depend on their spouses for care in old age regardless of gender (Lukman & Merry, 2023). Family caregivers in SA populations provide up to 90% of in-home

long-term care for older adults (Adelman et al., 2014). Family caregivers are people who care for their loved ones with or without blood relations, including in-laws and neighbors (Kilic & Oz, 2019). Self-care experiences of adults with chronic illness show that families, especially women family members, tend to be quite involved in caregiving (Ahmed et al., 2015; Lukman et al., 2020).

South Asian Immigrants Self-Management with Osteoarthritis

South Asian individuals' health beliefs regarding OA can impact their willingness to adopt self-management strategies. Underlying cultural beliefs and values may influence their understanding of the cause and treatment of OA and their receptivity to recommended management strategies (Lawton et al., 2008). Moreover, SA migrants are observed to lack understanding of how to access relevant self-management resources (King-Shier et al., 2019). People from the SA population believe that Western medications could be harmful in the long term (Kumar et al., 2016). Therefore, some people in this group do not rely on medical treatment (Yoon et al., 2023). Also, SA people generally believe that chronic disease is their destiny, and they accept this situation and lose hope for its cure or management (Dhatt et al., 2012; Yoon et al., 2023). Another prevalent belief among SA people is that a diet high in fat will lubricate, protect, and reduce joint pain (Dhatt et al., 2012). Illness is sometimes managed by storing strength through increased food consumption and reduced energy expenditure (Dhatt et al., 2012). The core strategies for managing OA in Western healthcare, such as patient involvement, weight reduction, and an active lifestyle, can conflict with beliefs held by SA individuals that illness is inevitable, bed rest is preferable, and increased food consumption and fat stores improve joints health (Jafar et al., 2020; Jayawardena et al., 2021). These examples of cultural beliefs reported in the literature emphasize the significance of paying attention to cultural factors

in healthcare. Cultural beliefs can profoundly influence how individuals perceive and approach chronic disease management.

Understanding and acknowledging cultural beliefs are crucial because they directly impact healthcare outcomes. Therefore, individual assessment becomes critical in providing appropriate healthcare (Dhatt et al., 2012). Cultural beliefs and practices shift and change based on the sharing of information within social networks and the health literacy of the community. By staying attentive to evolving cultural beliefs and practices, healthcare professionals can ensure that their care remains relevant and responsive to the needs of diverse patient populations. Literature suggests that patients with fatalistic cultural beliefs may benefit from a person-centered approach to foster positive health expectations, self-efficacy, and health locus of control (Bosworth et al., 2017; Gerland & Prell, 2021).

Life-Space Mobility Framework

Life-space mobility can be described as movement through different mobility zones that expand from home to areas beyond one's town/community or region (Lech et al., 2023). Webber's theoretical framework provides a comprehensive understanding of LSM, including different modes of movement such as walking, wheelchair use, driving, and alternative transportation (Webber et al., 2010). This framework identifies various mobility zones, ranging from the immediate sleeping area and home to the surrounding outdoor space, neighborhood, service community, broader surrounding area, and the entire world. The framework highlights that certain factors impact mobility (Webber et al., 2010), which are described below.

Gender, Culture, and Biography

The LSM framework recognizes that gender, culture, and biography fundamentally shape individuals' experiences, opportunities, and behaviors and influence mobility (Marmot et al.,

2008; World Health Organization, 2002). For example, women face more significant limitations and a greater risk of mobility disability than men (Murtagh & Hubert, 2004; Newman et al., 2023; Shumway-Cook et al., 2003). Moreover, culture significantly shapes LSM, impacting social relationships, educational and occupational opportunities, and physical activity habits (Schmidt et al., 2021).

Cognitive, Psychosocial, Environmental, and Financial Influences

Cognitive determinants include mental abilities, memory, processing speed, and executive functioning, while psychosocial determinants involve factors such as self-efficacy, coping behaviors, depression, fear, and social relationships (Mandolesi et al., 2018). These factors impact both an individual's motivation and their ability to move. For instance, low self-efficacy can lead someone to avoid mobility beyond their home despite their good health to walking ability (Leng-Hsien Soh et al., 2021). Moreover, depression, fear of falling, and conditions such as mild cognitive impairment and dementia also impact mobility choices (Pu & Moyle, 2020; Tian et al., 2023).

Webber et al. (2010) framework has been utilized to understand the risk factors and related factors associated with mobility limitations among older Hispanic adults living in the community (Chung & Flores-Montoya, 2017). This framework helps explain the complexities of mobility and highlights how different factors are interconnected (Chung & Flores-Montoya, 2017). Several studies have applied Webber et al.'s framework to identify potential mobility determinants among older adults (Dunlap et al., 2021; Giannouli et al., 2019; Jafari et al., 2020; Jansen et al., 2017; Kuspinar et al., 2020; Ullrich et al., 2019; Umstattd et al., 2014). These studies underscore the significant influence of mobility on various aspects of older adults' lives,

encompassing physical function, mental health, emotional well-being, social connections, and overall sense of self.

Using the Webber et al. (2010) framework in this research on the lived experiences of women living with OA and its impact on LSM will guide a structured and comprehensive approach. As this framework considers mobility's physical, social, psychological, and cultural dimensions, it allows us to examine how OA affects women's LSM. By analyzing these dimensions, we can examine the impact of OA on their ability to move within their daily lives and how it may reduce their overall QoL and HRQoL.

Life-Space Mobility and Older Adults

Life-space mobility is recognized as the functional ability of older adults (Dunlap et al., 2022); however, certain factors can reduce the LSM among older adults, such as a decline in intrinsic capacity, limited personal resources, and challenges related to environmental barriers (Bernabei et al., 2022). Reduced LSM can adversely affect health outcomes (Eckstrom et al., 2020). Literature suggests various recommendations to support older adults in maintaining their LSM (Panahi et al., 2022). In one study, using a mobile app for exercise instructions and disease education improved clinical outcomes related to OA, offering a potential long-term rehabilitation approach (Thiengwittayaporn et al., 2021). The Osteoarthritis Research Society International (OARSI) also recommends regular aerobic, muscle strengthening, and range of motion exercises for OA patients (Zhang et al., 2008). Furthermore, adaptations to the built environment such as improving infrastructure such as sidewalks, enhancing LSM in areas like parks, enhancing public transportation facilities, and providing assistive devices such as wheelchairs and walkers can contribute to addressing the LSM challenges faced by older adults (Panahi et al., 2022). These

environmental improvements are integral to enhancing overall QoL and HRQoL among older adults.

Quality of Life and Health-Related Quality of Life

Quality of life and HRQoL are distinct concepts. As Wilson (1995) described, QoL AS subjective well-being and overall satisfaction with life as a whole, incorporating an individual's happiness and satisfaction. In contrast, HRQoL measures an individual's functioning and perceived well-being, specifically their health. It includes health's physical, mental, and social domains (Hays & Reeve, 2008). Functioning refers to the ability to carry out specific activities, while well-being reflects subjective feelings and experiences related to health (Hays & Reeve, 2008). Quality of life is connected to the overall wellness of individuals and their perceived levels of satisfaction, connectedness, enjoyment, and autonomy (Kobayashi et al., 2017). When HQoL is diminished, it is associated with adverse health consequences, including an increased risk of illness and death. This, in turn, can lead to higher utilization of healthcare services and a reduced overall life expectancy (Steptoe et al., 2015; Zaninotto et al., 2016).

Osteoarthritis, a chronic disease is associated with reduced LSM, social isolation, fatigue, impaired sleep, and depression (Hunter, 2019). Aging of the musculoskeletal and locomotor systems increases susceptibility to OA (Anderson & Loeser, 2010). The burden of OA is largely attributed to pain and functional impairment, which significantly impact an individual's HRQoL (Atukorala & Hunter, 2023). The impact on HRQoL is multifactorial and depends on the stage of OA and the severity of symptoms experienced by the patient (Atukorala & Hunter, 2023). The prevalence of obesity and sedentary lifestyles, particularly among older adults, exacerbates the burden of OA (Safiri et al., 2020).

Based on the literature review conducted in Chapter One, it is evident that self-management and LSM among older immigrants are influenced by various factors such as cultural norms, socioeconomic status, healthcare access, and chronic health conditions. Furthermore, limited mobility can lead to increased risk of social isolation, reduced access to healthcare services, and diminished overall well-being. Additionally, chronic health conditions such as OA further exacerbate mobility limitations among older immigrant women.

Chapter two will focus on the methodological aspects of the study, discussing the research design, data collection methods, and ethical considerations. Chapter three will summarize the key findings of the study in relation to self-management of OA and impacts on LSM. Finally, chapter four will summarize the key lessons learnt and identify recommendations for research, policy, and practice.

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Chapter 2. Leading Walk-along Interviews with Older Immigrant Women: A Graduate Student Experience

This chapter of the dissertation is submitted and under review as Saba Un Nisa, Jordana Salma, & Allyson Jones. (2024). Leading Walk-along Interviews with Older Immigrant Women: A Graduate Student Experience. *International Journal of Qualitative Methods.* In this chapter, I explore the methodology of conducting walk-along interviews with SA older immigrant women, who were participants in my dissertation. This paper discusses my experience as a graduate student conducting these interviews, highlighting both the challenges and benefits encountered throughout the process. Additionally, I analyze how these interviews provided unique insights into the daily lives, mobility pattern and barriers and identify facilitators to their mobility.

I was responsible for the data collection, data extraction and analysis, manuscript composition, writing, submission, and response to edits from peer reviewers. Dr. Salma and Dr. Jones contributed to conceptualizing the study, manuscript composition, and edits at various stages of manuscript construction. Dr. Salma was the supervisory author of this manuscript and contributed to the overall concept formation, composition, and edits. All authors contributed to the conceptualization and defining methods for this study.

Abstract

Background: Walk-along interviews are a qualitative research method in which researchers accompany participants through their daily routines. This approach captures the detailed experiences of participants in natural settings, offering unique insights into their interactions and environments. This paper describes the experience of a graduate student conducting sitting and walk-along interviews with older SA immigrant women in Edmonton, Canada and highlights both the challenges and the benefits derived from this methodological approach.

Methods: Sitting interviews were conducted in the participants' homes to gather initial data on their daily routines and mobility patterns. Following this, walk-along interviews were conducted in the participants' neighborhoods. Using an interview and observation guide, interviews were conducted with two participants, and their experiences were subsequently documented using reflexive memos, images, and notes. Each interview lasted approximately 15-20 minutes.

Findings: The graduate student experience highlighted that walk-along interviews provided deeper insights into the participants' interactions with their environment. The benefits identified of walk-along interviews include gathering rich, context-specific data by observing participants in their natural environments and fostering rapport between the interviewer and the participants. Challenges encountered during walk-along interviews include maintaining participant comfort and privacy in public settings, effectively taking comprehensive notes while engaging with the participant, and ensuring participant safety.

Conclusion: This paper offers a thoughtful reflection on the intricacies of conducting walk-along interviews and highlights practical insights for novice qualitative researchers seeking to employ this approach with older immigrant women.

Keywords: Qualitative research, Walk-along interview, Immigrants, Older adults

Introduction

Creating age-friendly communities has been a key urban and national policy agenda item since the World Health Organization [WHO] (WHO, 2007) initiated the "Age-Friendly Cities" program. Edmonton is the first city in Alberta and the fourth city in Canada to join the WHO Global Network of Age-Friendly Cities (Alberta, 2014). Eighty percent of individuals aged 45 and above prefer to remain in their current homes or "age-in-place" (Toolkit, 2023). Aging in place is defined as "remaining in a community-based dwelling during one's late years in life" (Ratnayake et al., 2022, p.2). To improve the quality of life for older adults, it is essential to provide an empowering environment that facilitates both physical activity and social connections (Lee & Tan, 2023). The neighbourhood environment promotes health and well-being in later life, enhancing older adults' comfort, safety, and overall health (Cisneros, 2012). A supportive living environment promotes independence, positively impacting older adults' health through opportunities for active living, socializing, and mutual support in the neighborhood (Sugiyama & Thompson, 2007).

The neighborhood as a spatial unit is not a purely physical concept but can be described as socio-spatial without fixed boundaries (Allen, 2018). Individuals draw neighbourhood boundaries: "Every day, people observe and interpret their surroundings and construct mental maps that guide their relationship to space, their choices of movement, and their approaches to social interaction" (Chaskin, 1997, p.532). Evidence indicates that the health and behaviours of older adults are closely linked to their neighbourhood environments (Bhuyan & Yuen, 2022; Bigonnesse & Chaudhury, 2020). Life-space mobility (LSM) refers to the area where people move daily, from being confined to one room to moving in the town and beyond and incorporates the frequency and independence of moving around (Baker et al., 2003). The built

environment refers to structures, spaces, and products created or modified by people, including housing, transportation, and neighbourhood characteristics (Srinivasan et al., 2003). The level of social involvement and life-space mobility of individuals is influenced by the characteristics and design of the built environment (Jones et al., 2023; Miyashita et al., 2021).

Perceptions of neighbourhoods are often grounded in both observable and unobservable conditions, sometimes leading to potential discrepancies between how older adults perceive their neighbourhood and its actual objective reality (Martin et al., 2010). As such, perceptions, more so than objective characteristics in and of themselves, can elicit psychosocial or psychological processes or even a physiologic stress response that can affect mental and physical health (Martin et al., 2010). Researchers have used different approaches to understanding perceptions of neighbourhoods, such as walk-along interviews (Cao et al., 2019; Lauwers et al., 2021; Lee & Dean, 2018). The quality and validity of these approaches are dependent on the expertise of the researcher in managing the participant-researcher relationships while being sensitive to the environment of the research encounter, including attention to power dynamics, safety of researcher and participant, and comfort of the participant to share their experiences (Bartlett et al., 2023; Carpiano, 2009). There is some research on conducting walk-along interviews (Parsons et al., 2023) but little research on the experiences of novice researchers who are graduate students that participate in walk-along interviews (Devlin, 2013).

This paper aims to (1) reflect on the perspectives of a graduate student conducting walk-along interviews with older SA immigrant women as part of a larger study- the Edmonton Neighborhood Study (ENS), (2) describe the advantages and challenges of conducting walk-along interviews and, (3) outline implications for novice researchers who are learning to become independent in conducting qualitative walk-along interviews.

Study Context

This reflexive account is drawn from participation in the ENS, a community-based participatory research study that uses multi-phase mixed methods to promote outdoor mobility and enhance neighborhood walkability for racialized older immigrant (RIO) women in Edmonton, AB, Canada. The primary research question is: "*What are RIO women's experiences of urban walkability and how can we promote outdoor mobility in this population?"* The study focuses on RIO women from Arab, African, and SA communities and uses maximum variation sampling to ensure diversity across neighborhoods, ages, health status, religions and ethnocultural identities. Potential participants were recruited by community liaisons who were cultural and linguistic insiders from partner community-based organizations with strong connections with the respective immigrant communities. Social media and flyers were also used to expand the scope of recruitment. Inclusion criteria were older women (age ≥55 years) who self-identified as immigrants from Arab, SA or African communities and who reported being able to walk ≥1 block continuously on a flat surface independently with or without a walking aid. Potential participants were excluded if they had two or more falls in the last few months or if they reported health conditions that prevented outdoor walking such as compromised cardiovascular function.

This reflexive paper reported on phase one of the primary study, which was completed over one year between 2023 and 2024. Ethics approval was secured for the primary study from the University of Alberta Health Research Ethics Board (#Pro00123689). A team of researchers, fluent in the same languages as the participants, conducted qualitative interviews at home (sitting) and walk-along semi-structured with RIO women. A socio-demographic and an interview guide questionnaire (developed with team consultation) were included in the

qualitative interview which were completed on the day before the walking interview. Walking interviews could be completed on separate days depending on the participant's preference and if weather and air quality conditions were acceptable. Some interviews were attended by carers or family members with consent from participants. Prompting questions from an interview guide were used to encourage participants to share their experiences of living in their neighborhoods. All interviews were audio-recorded. Observation of participant's homes and neighborhoods included photo documentation where participants identified barriers or facilitators in the environment, which were photographed by the researcher. Observation notes and photographs are used to create a comprehensive record of the participants' neighborhood environment (Byrne, 2021). Researchers maintained reflexive memos and conducted a place-based reflexive thematic analysis (Braun et al., 2023) to explore the study findings.

Reflection Context

This reflexive paper focuses on interviews completed with two RIO women from SA communities. Both interviews were conducted in an urban centre across two neighborhoods where participants lived. The location for the walk-along interview was determined by participants based on where they went for a routine walk or moved around in their leisure time. Selecting the location for interviews holds significance for qualitative researchers. However, sitting interviews were done at participants' homes. Conducting sitting interviews in participants' homes is often preferred, as the home environment creates a sense of comfort (Britten, 1995). This approach provided researchers with deeper insights into the participants' daily lives (Britten, 1995). Sitting interviews at home enabled the observation of family dynamics through the enactment of "doing family." This entails witnessing family interactions in practical,

sometimes conflict-laden scenarios, yielding data that might be challenging to attain elsewhere (Herzog et al., 2019).

Reflections on Conducting Qualitative Interviews

Understanding the experience of learning qualitative research holds important implications for developing effective curricula, improving instructional methods, and enhancing pedagogical theory related to qualitative research (Cooper et al., 2012). Students experience excitement when they gain real research experience (Keen, 1996), anxiety and confusion when learning how to conduct data analysis (Richards & Bohlke, 2011), and honour and humility when hearing personal stories from participants (Hunt, 2009; Mitchell, 2007). In addition to experiencing conflicting emotions when learning qualitative research, students find experiential learning essential (Barrett, 2007; Keen, 1996). As a graduate student (interviewer) who is a nurse with clinical experience interacting with older adults and new to qualitative research, the first author experienced similar emotions to those reported in the literature but she was able to navigate these emotions with the support of an experienced research mentor. A mentor accompanied the first author to the first interview, offering valuable guidance throughout the interview process. The mentor was an experienced qualitative researcher and the graduate student's thesis supervisor.

To help the interviewer ask effective probing questions from the participants, the mentor provided examples such as asking for clarification, requesting more details, or exploring feelings and opinions in greater depth. Probes help the researcher manage the interview flow and keep the interviewee engaged in the interview process and stay on topic (Rubin & Rubin, 2011). Novice researchers must keep in mind that the purpose of a qualitative interview is not to get the informant to answer the interview questions; instead, the purpose is to listen to their stories to

acquire an understanding of how their experiences unfolded and the meanings that they associated with these experiences (Roberts, 2020). The research mentor observed the initial interviews and afterwards offered detailed feedback, highlighting both positive aspects and areas for improvement. The mentor then observed a second interview conducted by the graduate student. Mentors support graduate students by being there with them for the initial interviews, providing feedback, and offering advice. Acting as a valuable resource, the mentor offered insights to help navigate the complexities of research. As Sandelowski (1998) suggests, "an expert is a resource who can help researchers once again see the forest through the trees or see, for the first time, the trees in the forest (p.471)." After each interview, the mentor and graduate student engaged in a collaborative discussion, sharing observations, and insights, which allowed for troubleshooting issues that arose in the field.

Other researchers have emphasized the significance of involving someone with research expertise (Kvale, 2003). To guarantee interview quality, conducting initial interviews with experts is a prudent approach. This involves co-designing interview questions, reflecting on the interview encounter, and seeking expert feedback (Chenail, 2011; Roberts, 2020). Novice researchers can implement informed changes or revisions by engaging in this process, drawing from feedback and insights obtained during the initial interviews. In the following sections, the lessons learnt from conducting qualitative interviews with two RIO SA women are described by drawing from reflexive memos and supervisor-student discussions on the methodological experiences in the field.

Ayesha's At-Home Sitting Interview

The first qualitative interview was with Ayesha (Pseudonym), a 60-year-old SA immigrant woman. It was a sitting interview at the Ayesha's home followed by a walk-along

interview in her neighbourhood a few days later. The graduate student's (interviewer) worldview was shaped by being a SA international student who came to Canada to study for a Master of Nursing degree. She had lived in Canada for only one year. Her experience of Edmonton neighbourhoods was limited, and she was unfamiliar with many of the places where participants lived. She was also fluent in Urdu, which helped build trust with RIO SA women, who tended to be more comfortable with interviewers who shared gender and cultural backgrounds. The researcher's worldview shapes how they view and interpret the world (Kacen & Chaitin, 2006). Speaking in Urdu, the Ayesha's native language, during interviews helped establish a comfortable and familiar atmosphere. This decision ensured that the original words, phrases, and concepts were meaningful and understood in their intended context. Doing so minimizes the risk of misinterpretation and better preserves the participants' intended meaning (Smith et al., 2008). This can also facilitate open communication and a deeper understanding of participants' perspectives (Yow & Lim, 2019). During the interview, the study's purpose was explained to the participant, consent to record her voice for research purposes was obtained, and confidentiality was assured. The logic of informed consent presumes that the respondent will understand the research's intent as explained by the researcher or consent letter (Gubrium & Holstein, 2002).

After obtaining consent for the audio interview recording, the graduate student initiated the conversation by asking general questions about the participant's health and well-being while her daughter joined them for the interview. The graduate student conducting the interviews was also SA. Furthermore, because the participants were SA, the shared cultural background between the graduate student and the participants enhanced understanding and rapport during the research process. Shared cultural backgrounds may create a more open and comfortable space for discussions, fostering a sense of familiarity and shared identity (Pelzang & Hutchinson, 2017).

As Ayesha during the interview showed trust and feelings of belongingness with th first author as interviewer,

> *I find it quite different here in Canada because, back in our culture, we would have gatherings and meet friends and family almost whenever we wanted. You can really understand that it was a regular thing. But here, it's not the same. People seem so busy, and there aren't as many opportunities to chat. Plus, the language barrier adds another layer. I don't know the language as well, and that makes it a bit challenging to connect with others.*

After this informal discussion, the interviewer posed interview guide questions about her neighbourhood. The participant was seated in the living room, accompanied by her daughter and granddaughter. Ayesha shared her experiences and perceptions about the neighbourhood. The participant, Ayesha, said, "*I haven't gone outside, so I don't know how the people are and how it looks outside*". The graduate student sensed that she did not openly share her thoughts and feelings about the neighbourhood and her outdoor activities; her expression had a sense of reservation. This observation prompts reflection on the potential influence of familial dynamics and the home environment on a participant's willingness to share certain aspects of their experiences. Having a third person/family member in the interview setting, the interviewee might be inclined to modify their answers, aiming to project a particular image to both the interviewer and the family member (Boeije, 2004). It took one hour to complete the interview, as Ayesha shared her family's religious beliefs. After completing the sitting interview, the graduate student (interviewer) said goodbye to Ayesha and left.

Ayesha's Walk-Along Interviews

The walk-along interview method originates from multiple practices, including ethnography, anthropology, and geography (King & Woodroffe, 2019). In this approach, a researcher interviews while walking alongside one or more participants (King & Woodroffe, 2019). As such, the walk-along interview method has become a popular mode of data generation in a wide range of research disciplines, including critical disability studies, gerontology, urban studies, leisure studies, archaeology, migration studies, health sciences, public health, human geography, education, sociology, and social policy (King & Woodroffe, 2019). Walk-along interviews have also proven to be feasible and effective in research conducted with people of different ages, including children (Hitchings & Jones, 2004), young people (Anderson & Jones, 2009; Garcia et al., 2012; Holton & Riley, 2014) and older adults (Cao et al., 2019; Van Cauwenberg et al., 2012). The walk-along interview approach with older adults has proven highly valuable in uncovering insights into the environmental features for promoting physical activity and social interaction among older adults (Veitch et al., 2022). Ayesha walked with the interviewer to the park, about 10- to 12-minute from her home. The sidewalks were cracked, but the weather was pleasant, with a gentle breeze, and the neighborhood had mature trees (Image 1).

Image 1. A walk to the park (photo shared with participant consent).

Reflecting on the sitting and walk-along interviews, the graduate student noticed a change in the participant's demeanor. According to literature, power has several features, including controlling and constraining others' views and achieving one's goal by enforcing one's will on the other's opinion (Wang, 2006). Lukes (2021) states that power shifts could be covert or overt. In this case, the power shift seemed to be covert. During the sitting interview, she appeared hesitant, possibly influenced by her daughter's presence, which might not have allowed her to feel entirely comfortable in sharing her experiences. However, a notable transformation occurred during the walk-along interview, where Ayesha, the participant, walked alone with the interviewer. Ayesha seemed more at ease, which was evident in her expressions as she appeared to enjoy the weather and surroundings. She looked around a lot and seemed happy to be outside. We talked about different things easily while walking. It felt like she was comfortable with both walking and talking. Looking back, this experience made the interviewer realized how being outside and talking with someone can make a big difference. At first, she seemed worried, but as we walked

and chatted, she became more at ease. It's a reminder that spending time outdoors and engaging in physical activities with others can have on our emotional well-being. This short walk showed the importance of welcoming spaces for older adults.

Image 2. Enjoying the Park.

This image (Image 2) was taken in the park near Ayesha's home. We sat in a public garden, situated close to the participant home where people had grown some vegetables. Ayesha identified some of the vegetables names and showed interest. Ayesha was feeling good about having a walk, she was happy in this neighborhood and found it a relaxing place. She was active to walk and was familiar with the routes. This contrasted with the sitting interview, where she mentioned not going outside due to time constraints due to household responsibilities. The walk-along interview provided an opportunity to participants for free expression of their thoughts and sharing about their lives during an informal conversation during the walk. Walk-along interviews can thus serve as a rapport builder (Carpiano, 2009), working to minimize any discomfort in differences in education, age, ethnicity, or gender between researchers and participants (King & Woodroffe, 2019). She said that her family is dependent on her and needed her support, where she had to care for her young children, prepare meals and handle household chores. This

provided a clearer picture of why Ayesha refrained from walking or moving around her neighbourhood. In Walk-along interviews, the environment and the act of walking shape the conversation, often leading to valuable and unexpected insights such as spontaneous reflections on the surroundings or new perspectives on already discussed topics (Jones et al., 2008). This experience underscores the impact of interview settings on participant comfort and openness, highlighting the importance of adapting methods to foster a conducive environment for authentic communication.

Haleema's at-Home Sitting Interview

The second interview which occurred three weeks after the first interview, went well, as the graduate student gained confidence and reduced nervousness after practicing during the first interview. The second interview with Haleema (pseudonym), also a RIO SA immigrant woman who spoke Urdu, took a similar approach, starting with the at-home interview and followed with a walk-along interview. Haleema stated that she doesn't go outside much; instead, she spends most of her time with her family. Haleema shared that, during her free time, her family enjoys going for walks together. She mentioned that she prioritizes spending time with her family over interacting with neighbours which shows she has good bonding with family.

> *Whatever I need is available at home; my children are there to take care of me and drive me with them whenever I want. I have a big family, and we often have get-togethers. Therefore, I often don't feel the need to communicate or interact with neighbours.*

Haleema expressed happiness with her family, and her preference for spending most of her time with them rather than meeting neighbours. This preference suggests that Haleema finds fulfilment, companionship, and joy within her family unit. Investing more time with family members than socializing with neighbours may indicate a cultural or personal inclination toward

close-knit familial connections. Participants believe strongly in their families and view them as the ultimate source of support in case of potential troubles **(**Martin & Yurkovich, 2014). It underscores the importance of family shaping Haleema's social interactions and leisure activities, showcasing a prioritization of familial relationships over broader community engagement. This reflection aligns with a cultural context that places significant value on the family as a central and cherished aspect of one's life (Thomas et al., 2017).

Haleema's Walk-Along Interview

During the sitting interview, Haleema shared that she does not go for a walk far from her home and prefers having family members beside her. Therefore, her granddaughter accompanied us during the walk-along interview. After just five minutes of walking, Haleema started to feel fatigued, as evidenced by her facial expression and struggle to catch her breath. She told that she has OA, and it became apparent that the OA limited her ability to engage in prolonged walks. The interviewer realized that Haleema's concerns about falling due to her arthritis may have been why she wanted a family member by her side. Studies have indicated that older adults who walk with family members experience increased feelings of safety and security, reducing their fear of falls and enhancing their confidence to engage in physical activity (Alamdari & Abdi, 2019; Abdi et al., 2019). While Haleema was tired, we looked for a bench but could not find one. It became evident that Haleema, although not explicitly stating it, might avoid the nearby park due to a lack of resting facilities. It also showed her unfamiliarity with the surroundings. In this regard, the flexibility and dynamic nature of walk-along interviews offer opportunities for health researchers to incorporate explorations of space and place and the meanings attached to particular settings and contexts into studies which aim to develop an understandings of individuals' lived experiences of their health and environment (King & Woodroffe, 2019).

Moreover, this experience sheds light on the critical connection between environmental health and neighborhood surroundings, particularly for older adults like Haleema. Access to safe and inviting outdoor spaces is essential for promoting physical activity and overall well-being. However, mobility limitations and health concerns may contribute to difficulty in walking to improve physical activity. Creating age-friendly neighborhoods with amenities such as benches, shaded areas, and easily accessible pathways becomes paramount in fostering active aging and social connectedness among older adults (Najafi & Mohammadi, 2024).

During the walk-along interview, the interviewer remarked on the pleasantness of the greenery and trees in the area, suggesting that it would be a great place for regular walks. Haleema shared, *"there isn't any fruit. Why would everyone come here? There should be some fruits to make it attractive"*. Reflecting on Haleema's comment about the absence of fruit in the area (Image 3), it prompts consideration of the factors that contribute to the attractiveness of outdoor spaces. While greenery and trees enhance the aesthetic appeal and provide a sense of tranquility, the presence of amenities such as fruit trees can further enhance the experience for visitors.

By engaging directly with the participant and their environment, researchers can gain a deeper understanding of their experiences and perceptions. In this instance, the Haleema's observation about the absence of fruit highlighted a potential limitation of the area that may not have been apparent during a seated interview. These interviews provide a more holistic understanding of how individuals interact with their surroundings, including the sensory, emotional, and social dimensions of their experiences.

Image 3. Lack of Fruit Trees.

Benefits of Walk-Along Interviews

Reflecting on the intricacies of the participant interviews, differences in how Haleema and Ayesha engaged in their neighborhoods became apparent, with Ayesha reporting more opportunities and interest in her neighborhood while Haleema experienced more barriers to neighborhood engagement. This comparison brings to the forefront the varied and unique ways individuals perceive and engage with their surroundings. During a walk-along interview, the environment can act as a prompt, changing the course of the interview direction or topic of discussion (Emmel & Clark, 2011). As such, walk-along interviews can become "three-way dialogues" involving the interviewee and interviewer and the environment through which the interview meanders (Day & Cornell, 2023). It underscores the importance of recognizing the diversity of experiences among older adults and the subjective nature of their preferences. The

positive shift in the second participant's outlook emphasizes the potential impact of personal connections and positive associations with the environment, showcasing the multifaceted nature of older adults' relationships with the spaces they inhabit.

These reflections underscore the value of conducting qualitative research beyond surface-level observations, delving into the intricate layers of individual experiences to inform a more comprehensive understanding of the dynamics at play. As Garcia et al. (2012) argued, walk-along interviews assist in capturing the natural relationship between health and place in a participatory manner. Walk-along interviews create a setting for people to join, encouraging openness (Carpiano, 2009). According to Garcia et al. (2012), these interviews help discuss sensitive topics because participants tend to be more open with researchers. The environment itself can act as a prompt to get conversations flowing. In my example with a participant, Ayesha, talking openly felt more comfortable during a walk-along interview than sitting. When interviewing in a fixed location, and the environment is more static, it's essential to consider the comfort and safety of both participants and interviewers. While presenting challenges, walk-along interviews offer a rich and contextual approach to qualitative research, enhancing the depth and authenticity of the data gathered. Each interview became a learning opportunity, prompting continuous self-reflection to refine my interview practices.

Challenges of Walk-Along Interviews

Aside from the advantages of conducting qualitative walk-along interviews, there are certain challenges associated with this approach (King & Woodroffe, 2019). Some of the challenges experienced with the interviews are detailed below.

Challenge 1: Forgoing Audio Recorders

Literature has suggested that relying solely on note-taking or observations alone may lead to missed details or distractions, impacting data accuracy. Initially, it was a struggle to simultaneously take notes, observe the participant, and engage in conversation. The interviewer felt that using an audio recording device would help me capture detailed data better. However, it was challenging to record the participants' voices as some may fear that their voices will be recorded and may not respond authentically to questions posed by the interviewer.

A researcher should consider the limitations of the chosen data collection methods. They should explore ways to enhance the capturing of nuanced information during walk-along interviews because the depth and richness of data obtained directly impact the validity and comprehensiveness of research findings (Loraine et al., 2020). Instead of using a recording device, the graduate student took handwritten notes using a clipboard, which posed challenges. She felt this method did not allow her to capture all the observations, but taking photographs helped counter this disadvantage. The interviewer used a smartphone to take pictures of these identified features linked to notes taken during the walk and after the interview. Detailed notes immediately after the interview were critical to capturing nuanced aspects of the discussion with the participant. It is important to make detailed notes or transcribe them soon after completing the walk-along interview (Day & Cornell, 2023). This practice significantly contributed to understanding of participant's experiences. The images taken by the researcher significantly helped capture neighborhood features that might have been lost during the note taking process, especially aesthetic neighborhood features.

Participants often pointed to physical features of their neighborhoods that were barriers or facilitators to walking, such as traffic on the road, benches, cracked sidewalks, parks, and bus

stops. These insights highlight the importance of understanding the environmental context in walk-along interviews. Also, the chosen route was decided by the participants. Similarly, while forgoing audio recording devices posed challenges, alternative strategies such as visual aids can effectively address concerns. By incorporating visual documentation into note-taking, researchers can capture nuanced details of the environment and participant interactions, enhancing data recall and enriching qualitative insights (Comi et al., 2014; Wallwey & Kajfez, 2023). While challenges exist, leveraging alternative methods like visual aids allows researchers to navigate the complexities of walk-along interviews and maximize the depth and accuracy of the data collected.

Challenge 2: Attending to Participant Safety

Researchers usually focus on different aspects of interviews, but where the interview takes place is seen mainly as a place to gather information efficiently, aiming to maintain the interview's quality by reducing disruptions—not as a source of data itself (Leverentz, 2023). The location and route for the interview can be chosen by either the researcher or the participant, following a planned structure or unfolding naturally (Evans & Jones, 2011; Kinney, 2018). Prioritizing participant preferences and ensuring their safety has been a key part of this learning process. Being familiar with the routes, participants felt comfortable, enabling them to share more details about their surroundings and personal experiences. The process unfolded as an opportunity for methodological refinement, encouraging a more comprehensive and nuanced approach to participant inclusion while upholding ethical considerations. Other challenges include, establishing and maintaining rapport with a participant, responding flexibly to unexpected events, and taking notes simultaneously (King & Woodroffe, 2019).

A second challenge relates to the risk of falls, which became pronounced during walk-along interviews, especially due to fear and susceptibility to falls among older participants due to some cracks on the sidewalks. The research team included robust safety measures. Walk-along interviews can be physically and mentally demanding (Day & Cornell, 2023; Roberts, 2020). As Haleema felt fatigued during the interview and there was no bench in the neighborhood, it was challenging for Haleema to continue walking. It is important to ensure the participant's safety and look for signs of fatigue. Participant's safety would be an essential element to consider when deciding whether to choose walk-along interviews and the logistics around conducting interviews (Day & Cornell, 2023). Therefore, the graduate student used the safety measures protocol developed by our team, which included keen observation during the walk-along interview to ensure participant safety. We included a fall risk assessment, to address this challenge, evaluating participants' susceptibility and ensuring safety during the walk-along interviews. This included to to assess participants' capability to transition from sitting to standing independently, inquire about any dizziness or light-headedness during this movement, and reassure participants that they can take breaks or stop the walk if needed. Emergency numbers and procedures were included in the safety protocol, a crucial step to address the potential risks associated with falls and to ensure the well-being of participants, particularly those with unique mobility challenges. The graduate student enquired from the participants about any risk of falls and then made breaks during the walk-along interview to relax the participants and came back within 10 minutes of the walk.

Maximizing Nursing Expertise in Walk-Along Interviews

Familiarity with medical concerns not only reassures participants but also enhances the overall communication and rapport during the interviews (Butt, 2021). Being a nurse provided a

unique advantage in comforting participants, particularly when they expressed concerns about their health conditions and sought suggestions for managing them. By engaging in open and empathetic conversations, participants provided valuable perspectives on their healthcare experiences, allowing the interviewer to understand better the challenges they face and the strategies they employed to manage their health. Moreover, the interviewer became more aware of the risks associated with falls in outdoor environments for older individuals. During her interview, no such emergencies occurred.

Nurses' positionality within the healthcare system influences their approach to conducting walk-along interviews and interpreting research findings. As frontline healthcare providers, nurses may bring preconceived notions or biases to their interactions with participants. However, reflexivity plays a crucial role in mitigating these biases and ensuring the integrity of the research process (Johnson et al., 2020). Nurses must critically reflect on their roles, perspectives, and experiences throughout the research process to minimize the influence of their positionality on data collection and analysis. By acknowledging and addressing their positionality, nurses can enhance the credibility and trustworthiness of their research findings, ultimately contributing to the advancement of knowledge in nursing practice and healthcare delivery.

Conclusion

During walk-along interviews, attentiveness to participants and careful observation of the environment are essential. In this observational process, researchers can gain valuable insights into how interactions can provide powerful clues about what spaces, people, or cultural objects mean to others (Small & Calarco, 2022). With direct support, cultural congruence, and thoughtful consideration of environmental factors in data collection and interpretation, the walk-

along interview method presents a practical approach for graduate students to capture insightful qualitative data about participants and their neighborhoods. This method can effectively illuminate individuals' perceptions and insights into their daily lives. Having the opportunity to compare sitting interviews with walk-along interviews was a valuable experience. It gave insights into the distinct differences between the two approaches (sitting and walk-along interviews), highlighting that walk-along interviews can significantly enhance the richness and meaningfulness of the collected data. This comparative exploration deepened my understanding of how the interview setting can influence the depth of participant responses and the overall quality of gathered information. In conclusion, conducting interviews with older immigrants to explore their neighbourhood experiences has revealed the efficacy of the walk-along interview approach. This qualitative method is the most advantageous as it facilitates a comprehensive understanding of both the objective and subjective environmental aspects.

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Chapter 3. Self-Management and Life Space Mobility Experiences of Older South Asian Immigrant Women with Osteoarthritis in Canada: A Qualitative Study.

In this chapter, I discuss the self-management and life-space mobility (LSM) experiences of older South Asian (SA) immigrant women with osteoarthritis (OA) in Edmonton, Canada, using a qualitative descriptive approach. Various barriers, such as limited access to transportation, dependence on family, or lack of healthcare access, can impact self-management and exacerbate the condition of OA, potentially leading to restricted LSM due to physical symptoms such as pain and stiffness. Effective self-management practices can help mitigate these symptoms, enhancing their LSM. Conversely, limited mobility due to OA can pose challenges to self-management efforts, as physical limitations may affect adherence to exercise regimens or access to healthcare services. Moreover, I will highlight the challenges older SA immigrant women face in Canada and how these challenges affect their daily routines, movements in daily life, and strategies for managing OA.

I was responsible for the data collection, data extraction and analysis, manuscript composition, and writing. Dr. Jordana and Dr. Allyson contributed to conceptualizing the study, manuscript composition, and edits at various stages of manuscript construction. Dr. Jordana was the supervisory author of this manuscript and contributed to the overall concept formation, composition, and edits. All authors contributed to the conceptualization and defining methods for this study. This manuscript is in preparation for submission to a peer-reviewed journal.

Abstract

Background: South Asian (SA) older immigrant women in Canada, encounter distinctive challenges in self-managing chronic diseases like osteoarthritis (OA) and maintaining life-space mobility (LSM). Self-management is vital to dealing with chronic diseases because it enables individuals to actively engage in their healthcare, leading to better symptom control, improved well-being, and greater independence in daily life. This study aims to explore the self-management experience and LSM of SA older immigrant women with OA in Canada.

Methods: A qualitative descriptive approach was used to interview 12 participants either in person or on the phone interviews. The participants were SA immigrant women aged 60 years or above and suffering from knee and hip OA. Two participants completed walk-along interviews in their neighborhoods. We used purposive sampling and participants were recruited through a developed screening questionnaire for confirmation of hip and knee OA. A thematic analysis was conducted following the steps outlined by Braun and Clarke.

Findings: We categorized our findings into three themes: (1) Immigration status as a barrier to the management of OA, (2) participants' beliefs in health and osteoarthritis management, and (3) the impact of OA on LSM. We found that older SA immigrant women encountered challenges in managing healthcare costs due to their immigration status. Additionally, women faced difficulties accessing and utilizing healthcare services, such as experiencing long wait times for treatment. Moreover, OA significantly affected their daily activities, religious practices, and social interactions, which limited their LSM.

Conclusion: Collaborative efforts within communities are essential to develop and implement effective strategies that address the unique barriers faced by this demographic

Keywords: Osteoarthritis, South Asian, immigrant women, cultural beliefs, health literacy, social isolation

Introduction

Osteoarthritis (OA) is the most common type of arthritis, characterized by joint cartilage and bone breakdown (Poulet & Staines, 2016). According to the Global Burden of Disease (2019), it was estimated that more than 500 million people, or roughly 7% of the global population, were living with OA (knee, hip, hand). Of these, nearly 70% had knee OA, compared with 6% hip OA and 27% hand OA. In Canada, 1 in 8 (13%) older adults from OA Canadians, representing a major cause of pain and disability in society (Leite et al., 2011). Older adults aged 60 years or above are more vulnerable to developing OA (Marshall et al., 2019). Osteoarthritis can affect several joints; however, the most prevalent joints affected by OA are the knee, hip, and hand, and, in turn, this impacts well-being among older adults (Cross et al., 2014). In Canada 19% of older adults have knee OA (Wilfong et al., 2023), and 7.6 % have hip OA (Plotnikoff et al., 2015).

Older immigrants, especially women, are more vulnerable to health issues than younger immigrants and the non-immigrant population due to physiological changes associated with aging, compounded by challenges in accessing healthcare, language barriers, cultural differences in health practices, and increased caregiving responsibilities in a new environment (Wang et al., 2019). Cultural barriers, chronic illnesses, limited spatial mobility, and low socioeconomic status significantly impact the health of older immigrant women (Subedi & Rosenberg, 2014). Older immigrant women face more significant health risks, financial disadvantages, and challenges in accessing healthcare than Canadian-born women (Guruge et al., 2021). Chronic diseases such as OA can reduce their mobility, which may affect their health-related quality of life (HRQL) and increase morbidity and mortality (Martin & Yurkovich, 2014).

Life-space mobility refers to the area where people move daily, from a room in their home to moving in their neighborhood and beyond. It incorporates frequency and independence of movement (Baker et al., 2003). Some older adults aged 60 years or above (United Nations, 2001) encounter difficulties performing Instrumental Activities of Daily Living (IADLs), particularly self-care tasks such as bathing, as well as meal preparation, and grocery shopping (Andreasen et al., 2015; Hestevik et al., 2019; Van Seben et al., 2019). A restricted LSM is associated with reduced intrinsic capacity, limited personal resources (financial and social support,) and challenges related to environmental barriers (accessibility, transportation). Mobility limitations can adversely affect health outcomes, including increased risk of cardiovascular mortality, ADL disability, cognitive decline, and depression (Cunningham & Cunningham, 2020). Aging in place, a concept that highlights older adults' ability to live independently in their homes and communities as they age, underscores the critical role of maintaining mobility and is essential for promoting social connectedness and overall well-being throughout the aging process (Ratnayake et al., 2022, p.2).

South Asians, including individuals from India, Pakistan, Bangladesh, and Sri Lanka, constitute a significant portion of Canada's racialized population (28.4 percent) and are a notable segment of the overall Canadian demographic (Islam et al., 2014; Statistics Canada, 2017). Understanding and acknowledging cultural beliefs of SA immigrants is crucial because cultural beliefs impact SA women’s health beliefs regarding OA and their willingness to adopt self-management strategies. Underlying cultural beliefs and values may influence healthcare professionals understanding of the cause and treatment of OA and their receptivity to recommended management strategies (Lawton et al., 2008). Moreover, SA immigrants may lack understanding of how to access relevant self-management resources (King-Shier et al., 2019),

such as rehabilitation services, home care support, health education programs, community health centers, and resources for managing chronic conditions like diabetes or OA.

Self-management plays a crucial role in the management of OA such as medication adherence, physical activity, and diet management. Cultural beliefs and norms among the SA population significantly affect management of health and overall well-being. Evidence has reported that SA immigrants, especially women, have low rates of help-seeking behavior from medical professionals and social groups (Sripada, 2020). In this population, the preference for traditional medication over Western approaches is prioritized for managing disease processes or chronic conditions (Ahmed et al., 2022; Jamil et al., 2022). However, women find it more comfortable to address their health matters with a female doctor who understands their culture and language (George et al., 2014). While there are studies on physical activity in SA populations (Ahmed et al., 2015; Babakus & Thompson, 2012; Lukman et al., 2020; Mahmood et al., 2022) and some limited evidence on self-management in this population (Dhatt et al., 2012; Riegel et al., 2021), this body of literature does not focus specifically on OA. Additionally, there is limited understanding of the ways self-management intersects with LSM and migration experiences to influence the wellbeing of older SA women with OA.

Understanding the complexities of self-management and LSM among SA older immigrant women with OA is crucial for developing targeted interventions. Perception of safety in the neighborhood among older adults is crucial, as it influences their mobility and overall well-being. A sense of safety can affect their willingness to engage in outdoor activities and their overall quality of life. These interventions should focus on empowering individuals to proactively manage their condition, foster independence in daily activities, and mitigate the impact of OA on their quality of life.

It is crucial to enhance culturally sensitive approaches that address unique barriers such as language barriers, cultural beliefs, and access to healthcare services and designing neighborhood. The findings of this research can inform policy development aimed at improving healthcare access, reducing disparities, and addressing systemic barriers faced by older SA immigrant women with OA. The research question for this study is, "*How does OA influence the experience of LSM and self-management among SA older immigrant women living with OA of the hip and knee in Edmonton, Canada?"*

Methods

Research design:

This study used a qualitative descriptive approach to understand the self-management and LSM experiences of older SA immigrant women with OA in Canada. Qualitative description serves as a platform for amplifying the voices of individuals experiencing a phenomenon of interest (Bradshaw et al., 2017; Sullivan-Bolyai et al., 2005). This design is suitable for effectively capturing the nuanced experiences of older SA immigrant women related to self-management and LSM.

Ethical approval:

This study received ethical approval (Ethics # Pro00123689) from the University of Alberta Ethics Review Board and is part of a larger study, the Edmonton Neighborhood Study (ENS), focused on immigrant and racialized women's experiences of aging in place in their neighborhoods.

Setting:

This study was conducted in Edmonton, Alberta, and data were collected at the participants' homes and in their neighborhoods with some participating virtually due to travel at the time of the study.

Participants/Sample Size:

This study included 12 SA immigrant women with self-reported hip and knee OA. Socio-demographic details of the participants were collected**.** Participants were recruited using purposive and snowball sampling methods. Purposive sampling involves selecting participants based on specific criteria relevant to the research topic (Palinkas et al., 2015). Snowball sampling, on the other hand, involved initial participants referring others who met the criteria, thus creating a chain referral process (Parker et al., 2019). These sampling methods were chosen to include individuals with diverse perspectives and experiences related to the research topic. Community liaisons, fluent in the participants' languages, played a crucial role in identifying, recruiting, and retaining potential participants from the same community as the ENS study. For inclusion, participants met specific criteria to align with the broader study: (1) age 60 years or older, (2) immigrant status, (3) self-identification as SA (Afghanistan, Bangladesh, India, Pakistan, Sri Lanka), (4) proficiency in English, Urdu, or Punjabi, and (5) a self-reported diagnosis of OA of hip and knee. Additional screening questions were asked from participants for the confirmation of hip and knee OA **(Table 2)**.

Instruments / Measures:

An OA interview guide **(Appendix A)** developed with the help of researchers with expertise in migration, aging, and OA was used as a data collection instrument. A socio-demographic form created for the larger study was used to collect sociodemographic details of

the participants **(Appendix B)**. A detailed observation guide was used to record fieldwork observations during the walk-along interviews **(Appendix C)**.

Data Collection:

This study was done primarily through semi-structured interviews involving 12 older SA immigrant women. Prior to the interviews, the primary author (SN) initiated via phone the first contact with the participants to discuss the study's purpose, and obtain consent to participate. Participants were informed about the study's objectives through an information letter, and consent was obtained through written and verbal means **(Appendix D)**.

The interviews were conducted in-person (10 participants) and via telephone conversations (2 participants). The decision to conduct telephone interviews was primarily influenced by logistical considerations. Due to the geographical dispersion of participants, with some not being in the city during the interviews, telephone interviews were chosen as a practical alternative to ensure study participation. This approach allowed for flexibility in data collection while accommodating the participants' locations and schedules. In-person interviews consisted of at-home interviews lasting approximately 30-45 minutes, and walk-along interviews in neighborhoods were conducted for 5-10 minutes with two participants. This decision was made due to weather conditions during the winter months and mobility constraints experienced by certain participants.

All interviews were audio recorded. During walking interviews, detailed field notes were taken with photos of neighborhood barriers and facilitators to mobility as described by participants. The data collection process continued until reached saturation, meaning no new information or themes emerged from the data on OA management and LSM.

Data Analysis:

All interviews in Urdu were transcribed verbatim in the same language, and the resulting transcripts were systematically input into NVIVO software (1.2 version) for thorough analysis. Only relevant quotes were translated into the English language for dissemination.

Thematic analysis, guided by Braun and Clarke's (2013) six steps, was applied to discern and understand developing themes. The details of initial coding and emerging themes are detailed in **(Figure 1)**. The analysis was carried out by [SN], utilizing NVIVO software for data management and organization. Thematic categories and patterns were iteratively developed through coding and refining to ensure a comprehensive understanding of the data. In the case of walk-along interviews, written notes and observations about participants' activities in the neighborhood were documented.

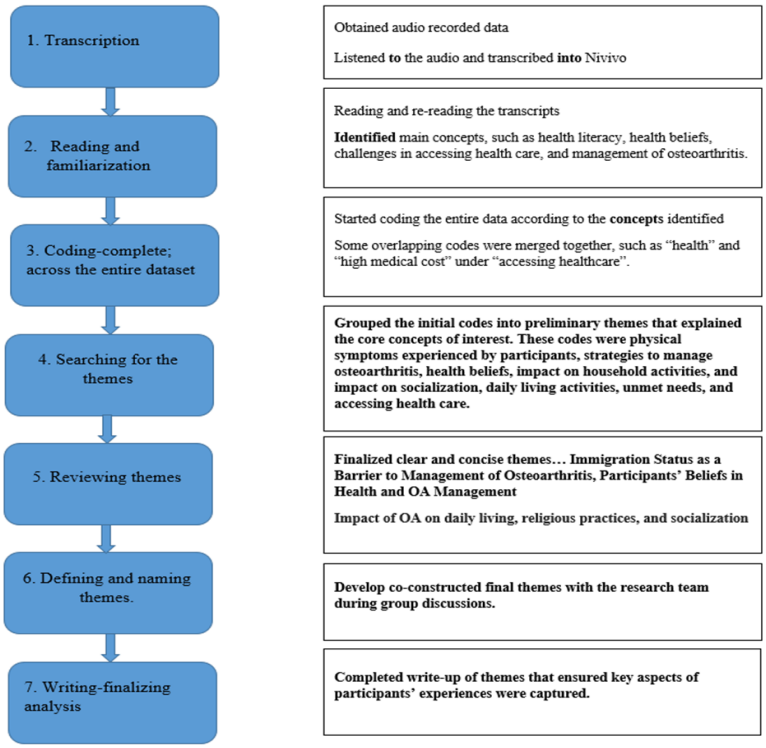

Figure 1. Trends of emerging themes using Braun and Clarke's thematic analysis steps.

Rigor in the analysis was ensured by utilizing detailed multiple methods such as interviews, photo-elicitation, and observation notes from walk-along interviews, researcher triangulation through co-analysis with research team (AJ, JS), and employing reflective memos to document researcher insights and interpretations throughout the analysis process.

Reflexivity

The interviews were led by (SN), a Master of Nursing graduate student with prior experience conducting qualitative interviews as a research assistant for the ENS. SN also brings a background as a registered nurse in her home country, Pakistan. This experience influenced how she communicated and understood health-related topics, potentially providing deeper insights into the data collection process. Additionally, her familiarity with the participants' native language facilitated smoother interactions during interviews. Other members of the research team (AJ & JS) are experienced researchers with expertise in migration, aging, and OA who have worked extensively with older immigrant adults.

Results

The study participants were all SA women between the ages of 60 and 75 years. Ten women were immigrants (citizens or permanent residents), with two migrating to Canada on a super visa. These two women with visitor status were included mid-way through the study as divergent cases that were rich exemplars of the hardships faced by older adults in this migration category. Participants had been in Canada for 2 to 5 years, spoke Urdu, and had lower socio-economic status. All women had OA, with eleven participants experiencing OA in the knee alone, and one had both hip and knee OA. Some women had other health conditions, such as diabetes and hypertension (**Table 1**).

This study employed the University of Alabama at Birmingham (UAB) Study of Aging Life-Space Assessment (LSA) tool to measure LSM among older SA immigrant women with OA (Baker et al., 2003). The LSA questionnaire UAB identifies the zones through which each participant moved during the four weeks prior, effectively characterizing their community mobility. Participants are categorized based on their activity level within specific spatial zones, such as within their home (level 1), the immediate vicinity outside their residence (level 2), areas within their neighborhood but beyond their immediate residence (level 3), locations beyond their neighborhood but within their town (level 4), and places outside of their town (level 5). Additionally, the questionnaire evaluates the frequency of participants' movements within these zones (Bake et al., 2003). Subsequently, scores are assigned by integrating the participant's activity level, the level of assistance required for mobility, and the frequency of movement within these zones. These scores provide a comprehensive assessment of participants' mobility, ranging from zero, indicating complete immobility, to 120, representing daily travel outside the town without any assistance (Baker et al., 2003).

The LSM scores observed among participants in this study spanned a range of 15 to 82 (**Figure 2**). These variations were attributed to the differing severity levels of OA among participants. Specifically, those women facing severe OA and limited transportation support were associated with lower LSM scores, as evidenced by a score of 15. Additionally, walk-along interviews with participants provided further insights into their mobility levels around the environment. This suggests that individuals with more severe OA and limited access to transportation may have experienced significant challenges in self-management of OA and limited their mobility, potentially restricting their ability to move within their community and engage in daily activities.

The qualitative findings of this study are categorized into the following themes. Initial themes as they were emerging are supported by participants' quotes are mentioned in **(Table 3).**

1. **Immigration Status as a Barrier to Management of OA:**

South Asian older immigrant women with OA face difficulties in effectively managing their disease. These women encounter a range of challenges in accessing appropriate healthcare related to their disease process. Regardless of their length of stay in Canada and educational levels, many lacked access to appropriate healthcare services. As one of the participants on a super visa who did not qualify for Alberta Health Care Insurance Plan (Medicare) due to her visitor status shared, "*If doctors advise a good medicine to cure the disease, it is not covered in insurance, we have to take it from outside, when we go to the pharmacy, they say you do not have medical insurance so you have to pay*" (P-03). Medication coverage varies between provinces and territories in Canada. For instance, while most provinces, including Alberta, provide partial coverage for certain medications, they often do not cover the full range of medical expenses for immigrants. Coverage may include some medications but exclude others, posing challenges for immigrants who may not have access to comprehensive healthcare benefits. Participants on super visas might stay in Canada for ten years or less but require private health insurance that they often cannot afford and, thus, remain with little access to the healthcare system to manage their chronic health conditions. This highlights the impact of immigration status as a barrier to managing OA effectively.

Other participants shared that they have access to medical facilities in Alberta, but the quality of services was insufficient to manage their OA. The long wait times to see a specialist was a significant burden. One participant who came to Canada two years earlier shared concerns related to accessing healthcare:

> Here, the medical system is good, but it takes time and a lot of time, you know, we really struggle to find a doctor, and we got a doctor after two months. Recently, we had a meeting with our family doctor. Also, we have an upcoming meeting with him, and of course, we know the doctor will tell us on Monday to go to the orthopedic doctor. The orthopedic doctor will tell us to go to the physiotherapist. Physiotherapists will refer us to put injections in the joints from any medical facility, and then it will take 4-5 months to deal with this issue (P-04).

Participants also mentioned that they received quality healthcare services back in their home countries. One participant who has been in Canada for nine years shared persistent challenges beyond the initial settlement phase, where expectations of receiving specialized medical care versus generalist care were communicated:

> In India, it's different. If you have an appointment today, you can see an orthopedic doctor tomorrow. We used to have physiotherapists come to our homes. But here, it' not the same. We need to see a doctor, but it takes a long time for the process. So, we must be patient and bear the pain. Even if the health condition worsens, there is no option except waiting (P-07).

Participants highlighted that the current medical guidance is insufficient, potentially contributing to the worsening of their conditions. They also highlight a potential gap in health literacy, contributing to the further deterioration of their health condition. Participants stressed the importance of exercise but expressed a lack of guidance on taking preventive measures in their daily routines. Further guidance about dietary measures and exercise was needed to help understand benefits and risks. One participant with severe pain living alone with her husband for five years in Canada and having formal education of 14 years from her home country shared:

> Doctor once told me how to exercise, but I do not remember that anymore. However, I do exercise in the morning sometimes, such as extending my legs and bending them by placing my hands under my knee. This helps to reduce some of my pain. But I am not sure what other exercises could be helpful. There should be someone who can come to our home and help us do exercise. Also, it would be great if someone could come and help me in walking, I think experts know better how to make it possible (P-02).

Participants also discussed the need for designated spaces for older adults to discuss and talk with people with similar conditions where they can share their experiences and learn from others. One of the women, who has been living in Edmonton for 49 years and has 16 years of formal education, shared that despite her high levels of education, knowledge gaps persisted, and these could be remedied via support groups to manage their health conditions:

> The government should organize a seminar for people with osteoarthritis. In this session, doctors can help us by explaining everything related to pain and other issues, such as diabetes and arthritis. This would enhance our satisfaction, and we could openly share our problems with each other; in this way, we could get some mutual support (P-08).

Older immigrants often reported feelings of social isolation in Canada, even when living with family, due to language and mobility barriers that prevented socialization with the wider community. Having opportunities to access peer support for OA management was identified as important, in addition to improving access to formal healthcare services.

2. **Participants' Beliefs about Health and OA Management:**

Participants held different beliefs about managing their health and OA. Older SA immigrant women believed that diet plays a major role in improving their health. As one of the older immigrant women with OA shared:

> It's recommended to have turmeric milk. If possible, avoid heavy meals at night and opt for fruits. In the morning, include some dry fruits, and be mindful of avoiding salty and spicy foods. Taking care of our diet is essential, and incorporating salads is a good practice (P-02).

Most participants (n=10) held a strong belief in the efficacy of home remedies and herbal solutions for managing OA symptoms, particularly pain. Furthermore, a common belief was reluctance towards using medication, reflecting individualized strategies for OA management. Their reluctance stems from a belief that relying on pain medication might lead to prolonged dependency. A 61-year-old participant experiencing moderate pain shared her story. She lives in an extended family setup and is actively involved in caring for her grandchildren:

> No, I do not take medicine for pain, I use Vicks. But if there is more pain, then I take medicine. Otherwise, I don't, and I'm cautious because I'm afraid I might become dependent on it if I start taking it too frequently (P-10).

Additionally, considerations such as not wanting to burden the family or facing challenges in accessing healthcare services impacted their decision-making process. Barriers to healthcare access, such as limited transportation or lack of insurance coverage, deterred this participant from seeking medical treatment.

Participants believed being physically active can help them manage their symptoms and avoid other illnesses. A 71-year-old Indian participant, accustomed to maintaining her health through exercise, shared her experiences. She lives alone in a condo, is widowed, and has spent 24 years living in Canada:

> In our homeland, we didn't rely on tablets like our parents and grandparents did. Life here is more mechanized, and there's less emphasis on physical activity. Back home, we

> used to exercise and even do household chores, and our cooking methods were different. Here, there are machines for washing clothes, and stoves are commonly used, while back home, we initially used wood fires (P-02).

Living alone in a large metropolitan center such as Edmonton can present both opportunities and challenges when maintaining health and physical activity levels. On one hand, individuals, such as the participant above who is living alone, have the autonomy to make decisions about their lifestyle without the dependency on family members. They can structure their days and routines according to their preferences, which can be empowering when it comes to prioritizing health and fitness goals. On the other hand, living with family can result in commitments that are barriers to engaging in physical activity, despite a belief in the importance of remaining active, as shared by another participant:

> I find it hard to go outside sometimes because there's so much to do at home. I'm always cooking meals, playing with my kids, and taking care of my grandkids. It feels like there's never enough time to leave the house and do things outside (P-07).

3. Negative Impacts of OA on LSM:

Osteoarthritis significantly affects the LSM of participants. They described fatigue while performing household tasks and being unable to carry out household work independently due to pain, which resulted in a slower pace or seeking assistance from others. Some participants demonstrated restricted mobility within their homes due to higher pain levels or health limitations, as indicated by one participant's lower LSM score i.e., 15. However, others managed to move around their homes and reported minor pain or discomfort, reflecting moderate LSM scores. This suggests that pain levels significantly impact mobility, with higher pain correlating

with more constrained movement and lower pain correlating with easy movement around their home and environment.

A 74-year-old SA woman living in Canada for 49 years with her husband, having moderate to severe pain, shared her experience: "*I cannot stand for more than half an hour. If I need to do something, like cutting the vegetables, I grab a chair and sit down*" (P-08). Another participant with moderate pain and who was dependent on her husband for household tasks expanded on her struggles: "*I cannot do things quickly anymore. I have to work slowly and walk slowly. If something is on the floor, I can't pick it up by myself; I need someone to help me. It makes things take longer*" (P04).

This dependency can strain familial relationships and lead to feelings of guilt or burden for the individual with OA, their family, and their caregivers. Moreover, this study found that being an immigrant and facing challenges related to OA can intersect with cultural and religious practices, adding another layer of complexity to the experience. A 71-year-old Muslim woman who has moderate pain and has been living in Canada for the past seven years shared, "*I can't stand up repeatedly for Namaz (prayer). I offer prayers while sitting, as standing for too long hurts my knees*" (P-11). As one of the older Hindu women, who is dependent on her husband and has deep religious bonds reiterated, "*I desire to participate in religious activities, but I am unable to do so because I cannot sit*" (P-04).

This participant further highlighted a keen desire to participate in religious activities outside the home, but pain related to OA prevented this, which highlights role of OA in reducing their LSM, "*I really want to go outside and enjoy myself, but I have pain, so I can't. Before, I used to pray daily by standing, but now I can't stand for a long time. Today, I just sit and feel like I can't do those things anymore*" (P-04).

Muslim women expressed difficulties in offering prayers (Namaz), while Hindu participants shared challenges in sitting and praying during Pooja. These religious practices hold deep significance for individuals, providing a source of comfort, connection, and spirituality. However, the pain and mobility limitations associated with OA present significant obstacles to participating in these activities fully. Participants who experienced pain expressed difficulty in sitting in their religious prayer area, which discouraged them from attending religious gatherings outside their homes such as mosques and temples. As they were not moving outside of their home it leads to decrease in their LSM scores, highlighting the impact of physical discomfort on their ability to participate fully in their religious gatherings.

Furthermore, participants expressed socialization needs, emphasizing that in their home countries, they had a network of people to interact with. However, in their current location, everyone was busy, making it challenging for them to connect with others. Despite participants describing their neighbors as friendly and exchanging smiles during interactions, actual conversations were infrequent due to language barriers. This linguistic challenge created hesitation among participants when it came to initiating communication. The relationship with neighbors appeared cordial based on these brief interactions, yet the depth of engagement was limited primarily due to the difficulty in overcoming the language barrier. As one of the participants mentioned, who has lived in Edmonton for two years with her husband and experienced consistent moderate pain:

> I used to have friends in India, but now I don't have anyone. Everyone stays at home, and we can't see each other. If someone happens to meet in the garden, then we have a conversation; otherwise, we don't have any friends (P-04).

This indicates a strong desire for socialization, but the limited opportunities and restricted movement outside the home in their current environment that limits their ability to meet and interact with others. For example, during the seated interview with one of the participants, she mentioned her decreased interest in going outside. However, during a subsequent walk-a long interview, certain factors became apparent as reasons for her reluctance. She highlighted the absence of benches for resting, which was particularly challenging due to her OA and the need for frequent breaks. Additionally, she stated that not having people from her cultural background nearby limited her motivation to venture outdoors. The absence of neighborhood features like benches and amenities suitable for older adults with chronic conditions such as OA become evident in reducing LSM score among older immigrant women. Another participant with severe OA shared that the absence of washrooms poses a significant challenge to visiting the park. Consequently, she prefers staying home more often. These factors, compounded by the lack of neighborhood amenities and the severity of her OA, significantly diminish her overall LSM, resulting in a markedly reduced score of 15.

Many of the participants shared that they have unmet transportation needs. If they want to go somewhere they have to rely on their children, which they feel is a burden. Access to spaces outside the home and support to travel there was desired by many participants in this study. One SA older immigrant woman living in an extended family shared, "*I would like to have transportation options since my children are usually busy. This would be beneficial for meeting people or going to religious places*" (P-6). Another 67-year-old participant, living alone with her husband and experiencing moderate pain stated, "*We have a community center here, but we cannot go there because we don't have transport*" (P-04).

Transportation emerged as a significant barrier for women with OA. Being an immigrant with OA and with resulting mobility impairment necessitates reliable transportation for accessing medical care, social activities, and community resources. Majority of the participants did not have driving license (n=11) and highlighted their reliance on their children for transportation, or used public transport which they perceived as burdensome. One participant who used public transport effectively, with nearby bus stops, reported higher LSM i.e., 84, despite moderate OA symptoms. However, most participants depended on family members for transportation, which affected their overall LSM as their children were reported as usually too busy to meet their transportation needs. This dependency limited their ability to engage in social activities and added to their reliance on family members for their basic needs. Addressing the transportation needs of immigrant individuals with OA is essential for promoting their overall well-being and integration into their new communities.

Discussion

This study investigates the self-management and LSM experiences of older SA immigrant women in Canada and explores their challenges in managing OA and accessing health care services. The discussion will examine the self-management needs of older SA immigrant women, focusing on how lifestyle factors and cultural challenges impact their daily lives. It will address the unique limitations these women face, including barriers to accessing resources and maintaining mobility, and explore strategies to support their well-being.

Self-Management Needs of SA Older Immigrant Women:

Our findings support the existing body of literature regarding the influence of immigration status on the ability to access healthcare services and facilities. In our study, participants on super visas, which are temporary extended visitor visas for family reunification purposes in Canada, reported challenges in accessing healthcare services to manage their illnesses due to inadequate medical insurance coverage. Moreover, participants who were immigrants and not on super visas to Canada also reported purchasing expensive medication which was not covered by the provincial health insurance. Similar studies have documented the challenges faced by immigrant populations in navigating healthcare systems and accessing appropriate care due to legal and bureaucratic barriers, such as super visa status that does not allow immigrants to access the healthcare system free of cost (Chen et al., 2018; Li & Lee, 2023). Moreover, some participants reported that they desired to engage in exercise to relieve their pain but lacked transportation options to access programs and services. This limitation not only hinders their ability to self-manage their disease but also contributes to the progression of OA. Exercise is a key component in managing OA symptoms and delaying disease progression. Maresova et al. (2023) highlight that accessible transportation is crucial for older adults to

engage in physical activities, which can significantly alleviate OA symptoms and improve quality of life.

Consistent with previous studies, our findings highlight the significant role of cultural beliefs and practices in shaping health-related behaviors among immigrant populations (Cheng et al., 2019; Choi et al., 2014). Cultural norms, values, and traditional healing practices are crucial in determining how individuals perceive and manage health conditions such as OA. SA older immigrant women hold beliefs about illness causation and treatment modalities. We found that older SA immigrants are often reluctant to seek medical treatment and tend to rely more on traditional remedies, such as sitting in warm water, using turmeric, and applying oil on knees to relieve their pain. Culturally embedded beliefs about illness and aging may influence individuals' self-management coping strategies, help-seeking behaviors, and perceptions of social support (Osokpo et al., 2021). Our study underscores the importance of considering participants' beliefs and preferences in the development of culturally appropriate health interventions. Tailoring interventions to align with participants' cultural values and preferences enhances their acceptability, relevance, and effectiveness in promoting health and well-being (Joo & Liu, 2021). Moreover, our findings support the growing recognition of the need for patient-centered care approaches that prioritize patients' individual beliefs, values, and preferences in healthcare decision-making (Cheraghi, 2017; Korkmaz & Demirsoy, 2022). Engaging patients as active partners in their care and respecting their autonomy and cultural perspectives are critical for fostering trust, enhancing treatment adherence, and improving health outcomes. Healthcare providers must be attentive to older SA immigrant women's diverse beliefs and cultural contexts to deliver personalized, culturally competent care.

LSM Limitations of Older South Asian Immigrant Women:

We found that a significant number of participants experienced difficulties moving comfortably both within their homes and in their neighborhoods. These challenges were due to pain from OA, limited access to transportation, and a lack of appropriate neighborhood features, leading to reduced LSM and social engagement. Reduced LSM among older adults may restrict their ability to engage in social interactions outside their immediate surroundings (Moorthi et al., 2019). Moreover, social isolation itself can contribute to decreased LSM, as individuals may be less motivated to venture beyond their homes without social connections or support (Philip et al., 2020). Social isolation among these women further has adverse effects on health outcomes and quality of life among SA immigrant populations (Bilecen & Vacca, 2021; Lai et al., 2020). Moreover, OA-related pain and mobility restrictions may hinder socialization opportunities among older SA immigrant women, leading to feelings of isolation and loneliness (Hewlett et al., 2011; Hirase et al., 2021). Participating in social activities, gatherings, and community events is integral to maintaining social connections, fostering a sense of belonging, and preserving cultural traditions within immigrant communities (Hassanli et al., 2020). However, the physical limitations imposed by OA may limit individuals' ability to engage in social interactions, leading to social withdrawal and diminished quality of life (Hassanli et al., 2020). These physical limitations also hinder their ability to engage in self-management practices essential for managing OA effectively (Kamsan et al., 220). For instance, regular physical activity and exercise, which are crucial for mitigating OA symptoms, become challenging when mobility is compromised. The inability to participate fully in self-care activities may exacerbate pain and stiffness, potentially leading to further progression of the condition and reduce LSM (Nash et al., 2018). We found that participants who had higher LSM scores tended to have better self-

management strategies for OA and more accessible transportation options, such as nearby bus stops and supportive neighborhood infrastructure. Effective self-management of OA includes regular physical therapy, appropriate medication use, and lifestyle adjustments to mitigate pain and improve mobility (Bruyère et al., 2019). Participants (n=4) who had robust self-management strategies for OA, including regular physical therapy and medication adherence, often expressed more confidence and comfort in moving around their homes and neighborhoods. Conversely, those who struggled with severe OA symptoms and lacked accessible transportation options reported feeling restricted in their movements. Participants who lacked resources to independently go outside due to their pain or dependency had low LSM scores. These individuals often expressed a desire for healthcare professionals to visit them at home for necessary treatments and exercises. This desire for home-based healthcare services underscores the challenges they faced in self-management of OA and maintaining mobility and social interaction, thereby highlighting the link between limited mobility, healthcare access, and lower LSM scores.

Furthermore, we found a lack of health literacy among participants, which aligns with previous research highlighting disparities in health literacy among immigrant populations (Chang, 2019; Li et al., 2018). Limited knowledge about OA management and self-care practices impedes effective disease management (Kooranian et al., 2022). It exacerbates mobility limitations, underscoring the importance of culturally sensitive health education initiatives tailored to the needs of immigrant women. The limited availability of resources in languages other than English and the lack of culturally relevant information hinder SA older immigrant women's ability to access relevant support services and adopt appropriate self-management strategies. Furthermore, we found that older SA immigrant women encountered difficulties

attending religious gatherings, visiting places of worship, and engaging in prayer rituals due to pain and mobility limitations associated with OA. This disruption to religious practices can have profound psychosocial implications, impacting individuals' sense of identity, spirituality, and social support networks (Ahmadi et al., 2020; Racine et al., 2023).

Summary

In this study, we explored how self-management of OA, access to transportation, and healthcare resources impact participants' LSM. Participants who effectively managed OA through regular therapy and medication adherence, coupled with access to supportive transportation options, generally reported higher LSM scores. These individuals demonstrated greater mobility and engagement in community activities, which positively influenced their overall well-being. Conversely, those with limited self-management strategies and restricted access to transportation or healthcare services experienced lower LSM scores. Their reliance on home-based healthcare practices highlighted the challenges posed by physical limitations and environmental barriers such as inaccessible infrastructure and non-walkable neighborhoods. This study underscores the critical role of comprehensive support systems in enhancing the quality of life for individuals managing chronic conditions like OA, emphasizing the need for interventions that address both health management and environmental accessibility to promote greater life satisfaction.

Study Strengths and Limitations

This is a single-site qualitative study with a small sample of older SA immigrant women, but the study uses multiple data collection approaches such as sitting interview, walk along interviews and reflective notes which strengthens the credibility of the findings. The diverse sample allowed for exploration of various self-management strategies across education levels

and lengths of stay in Canada. Moreover, the researcher conducting the data collection belonged to the same cultural and linguistic background as participants, thereby ensuring that the participants' meanings were accurately conveyed and not lost during translation of the data. However, this study has some limitations, we used a screening questionnaire to assess hip and/or knee OA among participants, but it's important to note that this method may not provide a definitive diagnosis. Also, because we only studied SA populations mainly from India and Pakistan, the findings might not apply to all SA countries and cannot be generalized.

Conclusion

This study highlights the OA-related self-management and LSM experiences of older SA immigrant women living with OA in Canada. Through in-depth interviews and thematic analysis, we gained valuable insights into these women's challenges, adaptations, and resilience in navigating their daily lives while managing a chronic condition. The findings underscored the multifaceted nature of self-management strategies, encompassing physical, social, and environmental dimensions, which are further shaped by cultural beliefs and immigration experiences. Despite facing barriers such as language barriers, limited social support, and unfamiliar environments, the participants demonstrated the effect of OA in their religious activities, which reduced their LSM. Additionally, the study highlighted the importance of culturally sensitive healthcare interventions and social support systems tailored to the unique needs of older SA immigrant women with OA. Overall, this research contributes to a deeper understanding of the experiences of marginalized populations and underscores the necessity of inclusive approaches in healthcare and community services to promote holistic well-being among older immigrant women living with OA.

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Table 1. Socio-demographic details of the participants.

Characteristics		**n (%)**
Participants		12 (100)
Age Mean age (67.5.0 ± 4.49SD)	60-64 years 65-70 years 71-75 years	3 (25) 5 (42) 4 (33)
Country of origin	India Pakistan	8 (67) 4 (33)
Religion	Hindu Muslim	8 (67) 4 (33)
Level of Education	Secondary Higher Secondary	1 (8) 11 (92)
Year (s) in Canada Mean (13.2 ± 8.99SD)	0-10 years 11-20 years >20 years	6 (50) 2 (17) 4 (33)
Immigration Status	Permanent Resident Citizen Super Visa	6 (50) 4 (33) 2 (17)
Living Status	Family Alone (With husband)	9 (75) 3 (25)
Health History	Arthritis Diabetes Hypertension Cataract	12 (96) 8 (67) 5 (42) 1 (8)
Socio-economic Status	Average Below Average	10 (80) 2 (17)

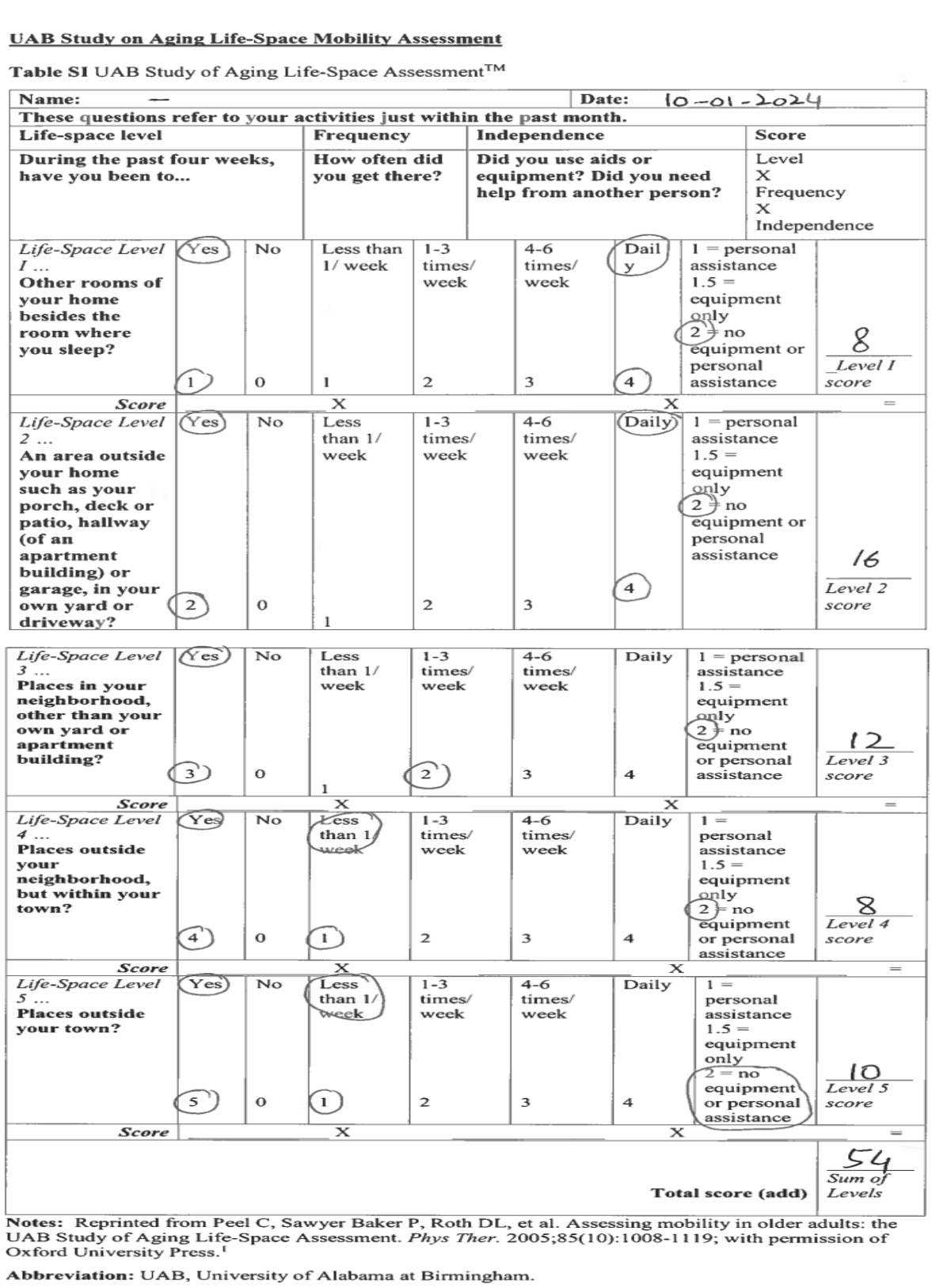
Table 2. Screening Questionnaire for Osteoarthritis.

1.	Pain, aching, or stiffness: Experienced in or around the knee(s)/hip on most days of the last month? (yes/no) Specify knee or hip or both: _____
2.	Relation to physical activity: Is your pain/aching/stiffness generally related to physical activity? (yes/no)
Note: If the participant answered no to any of the above questions, exclude them from the study. If the participant answered yes to the above questions, proceed to the following two questions:	
1.	Morning stiffness: Do you have morning stiffness in your joints lasting more than 30 minutes? (yes/no)
2.	Medical history: Do you have any of the following: Rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, fibromyalgia, or past knee injury in the past six months? (yes/no)
Note: If the participant answered yes to the above two questions, then excluded from the study.	

Table 3. Initial Themes and Supporting Quotes.

Themes	Subthemes	Participants Quotes
Physical symptoms experienced by participants	**Pain and Limited mobility** **Stiffness**	"When I get up in the morning, I feel like I can't move my legs. I take 10-15 minutes to relax and then get up" (P-10). "I feel so much pain, I don't walk because when I walk, the pain gets more worse, mostly I am keeping sitting on couch" (P-6)
Health beliefs	**Role of diet** **Reluctance to seek medical treatment**	"Pain in bones is a part of aging, so it's I think normal for people who are in the same older age group as me. I believe diet is the main thing to be healthy (P-07)" "I think it would be away better to take good diet, rather than relying on medication, as our grandparents and we never took medicine, taking medicine develops dependency on medications (P-02).
Impact on daily living activities	**Impact on household activities** **Impact on religious practices**	"I used to do my household tasks very quickly such as dropping the kids to school, making meals for family, but now due to pain i can't stand for long time or if I sit to take something, it is very difficult for me (P-04)" "I really want to involve in religious practices such as in our religion (Hindu), we have some Pooja which I can't do because i can't stand for a long time due to this pain of osteoarthritis (P-01)"
Strategies to manage osteoarthritis	**Medical treatment** **Surgical treatment** **Traditional herbs and exercise**	"I take some medicine, or painkillers to relieve the pain, these relieve my pain for some time, but that's not the long-term solution (P-05)". "I prefer to apply traditional herbs, I apply turmeric mixed in oil and apply it on my knees, it relieves my pain, and also sometimes I sit in warm water (P-10)".
Unmet needs/barriers to health management	**Lack of health literacy** **Long wait times & high medical cost and delay in medical treatment.**	"There must be someone who can assist me in doing exercises, because the exercise I do, I don't know whether I am doing right or wrong exercise (P-04)". I have been waiting for my appointment for 6 months, till now I haven't got the appointment to check for my disease and start treatment, the healthcare system is bad they don't see even if your condition is getting worse (P-04)".

Figure 2. UAB Study on Aging Life-Space Mobility Assessment Questionnaire.



UAB Study on Aging Life-Space Mobility Assessment

Table SI UAB Study of Aging Life-Space Assessment™

Name: —						**Date:** 10-01-2024		
These questions refer to your activities just within the past month.								
Life-space level		**Frequency**			**Independence**			**Score**
During the past four weeks, have you been to...		**How often did you get there?**			**Did you use aids or equipment? Did you need help from another person?**			Level X Frequency X Independence
Life-Space Level 1 ... **Other rooms of your home besides the room where you sleep?**	Yes (1)	No 0	Less than 1/ week 1	1-3 times/ week 2	4-6 times/ week 3	Daily (4)	1 = personal assistance 1.5 = equipment only (2) = no equipment or personal assistance	8 *Level 1 score*
Score		X				X		=
Life-Space Level 2 ... **An area outside your home such as your porch, deck or patio, hallway (of an apartment building) or garage, in your own yard or driveway?**	Yes (2)	No 0	Less than 1/ week 1	1-3 times/ week 2	4-6 times/ week 3	Daily (4)	1 = personal assistance 1.5 = equipment only (2) = no equipment or personal assistance	16 *Level 2 score*
Life-Space Level 3 ... **Places in your neighborhood, other than your own yard or apartment building?**	Yes (3)	No 0	Less than 1/ week 1	1-3 times/ week (2)	4-6 times/ week 3	Daily 4	1 = personal assistance 1.5 = equipment only (2) = no equipment or personal assistance	12 *Level 3 score*
Score		X				X		=
Life-Space Level 4 ... **Places outside your neighborhood, but within your town?**	Yes (4)	No 0	Less than 1/ week (1)	1-3 times/ week 2	4-6 times/ week 3	Daily 4	1 = personal assistance 1.5 = equipment only (2) = no equipment or personal assistance	8 *Level 4 score*
Score		X				X		=
Life-Space Level 5 ... **Places outside your town?**	Yes (5)	No 0	Less than 1/ week (1)	1-3 times/ week 2	4-6 times/ week 3	Daily 4	1 = personal assistance 1.5 = equipment only (2) = no equipment or personal assistance	10 *Level 5 score*
Score		X				X		=
							Total score (add)	54 *Sum of Levels*

Notes: Reprinted from Peel C, Sawyer Baker P, Roth DL, et al. Assessing mobility in older adults: the UAB Study of Aging Life-Space Assessment. *Phys Ther.* 2005;85(10):1008-1119; with permission of Oxford University Press.[1]

Abbreviation: UAB, University of Alabama at Birmingham.

Chapter 4. Conclusion

This chapter aims to highlight the significant impact of this research in nursing and community health, emphasizing how evidence-based findings can drive positive change in healthcare practices, inform policy decisions, and ultimately improve health outcomes for individuals and communities. The insights garnered from this study not only contribute to advancing the field of healthcare but also provide actionable knowledge that can be directly applied by healthcare practitioners. I will also explore strategies for disseminating these findings effectively. It is crucial that the knowledge gained from research reaches and benefits all relevant stakeholders, including healthcare professionals, policymakers, community leaders, and patients.

Summary

This thesis on “Self-Management Approaches and Life Space Mobility of South Asian Older Immigrant Women with Osteoarthritis in Edmonton, Canada” explores how factors such as cultural background, socio-economic status, and immigration status intersect to influence the mobility and self-management of SA older immigrant women. It also highlights how limited mobility can impact access to healthcare services, preventive care, and limited physical activity opportunities, affecting overall health and well-being. Furthermore, this thesis explores how OA affects the daily lives of SA older immigrant women, including personal, social, and religious dimensions. Moreover, the thesis emphasizes the importance of addressing barriers such as language proficiency, transportation accessibility, and cultural norms that may limit older immigrant women's ability to engage in activities outside their immediate home environment. The methodology used in this study “walk-along interviews” proved to be very helpful in understanding the nuanced experiences of SA older immigrant women in their natural environments, offering deep insights into their daily routines, interactions within their neighborhoods, and their LSM. It allowed for the observation of hidden barriers in the neighborhood, such as infrastructure and design, which revealed restrictions that hindered older immigrants from navigating their environment.

Implications for Research, Practice and Policy

Policy Implications

- Canadian policies related to older immigrants should be revised to ensure that all immigrants, regardless of their immigration status or duration of stay in Canada, have access to essential healthcare services. By extending healthcare coverage to all immigrants, Canada can promote public health and reduce disparities in healthcare access. Access to equitable healthcare is a fundamental right for all individuals, regardless of background or circumstances (Braveman, 2010). Canada should aim to have equitable access to healthcare services for all. Policy interventions must prioritize the design and implementation of healthcare programs tailored to the diverse needs of SA immigrant communities, ensuring culturally appropriate and accessible services.

Community and Healthcare Practice Implications

- Social service agencies should offer programs to promote social support and integration among immigrant populations. These programs can include peer support groups, cultural exchange events, and community engagement activities to foster connections, reduce isolation, and enhance immigrants' sense of belonging in their new environment (Allen et al., 2021).
- Healthcare professionals should provide health literacy programs and materials in multiple languages to enhance understanding and access to healthcare services, particularly targeting chronic conditions such as OA. This may include access to pain medications, physiotherapy, and education on self-management techniques. Provide education sessions on OA, its management, and preventive measures. This can empower participants to take proactive steps in managing their condition and improving their quality of life. Health literacy programs in

languages spoken by immigrant populations can empower individuals to better understand and manage their health (Johnson et al., 2019). Using comprehensive pain management strategies tailored to the cultural and linguistic needs of older immigrants is also required as unmanaged pain is shown in this study to be a significant barrier to mobility.

- Social inclusion initiatives should be enhanced to foster a sense of belonging and community engagement among immigrant populations, facilitating access to healthcare resources and support networks. Improving social inclusion through community-based initiatives can enhance access to healthcare services and promote holistic well-being among immigrant populations.

Research Implications

- In this study we identified ways SA older immigrant women lack health literacy to manage OA. These older immigrant women need clearer explanations of OA progression, guidance on navigating health resources, and assistance in understanding health information, including medication and treatment options, in a culturally and linguistically accessible manner. Research initiatives should be taken to explore existing and needed strategies for improving neighborhood infrastructure and access to healthcare services to support older adults with OA. Future research should focus on implementing various programs, evaluating their impact on health outcomes among older immigrant women. Researchers should also explore factors that influence health literacy and OA management across different cultural contexts. Research examining the impact of community-based outreach programs on health outcomes among older immigrant women can provide valuable insights into effective strategies for promoting health equity and

access to care (Shah et al., 2020). Moreover, there should be culturally sensitive health education programs to improve their understanding and management of health issues.

- This study highlights the environmental challenges and lack of infrastructure in SA older immigrant women' neighborhoods, which limits their mobility and ability to seek help to manage OA and maintain LSM. Future research should focus on interventions aimed at improving neighborhood infrastructure to support mobility and access to healthcare services for older adults with OA such as enhancing pedestrian-friendly infrastructure, improving public transportation options, and establishing community health centers with accessible services for older adults with OA. Additionally, exploring innovative approaches for enhancing social support networks and community resources could further promote OA management and overall well-being in these populations.
- Further research should focus on how religious practices and spiritual beliefs intersect with the management of chronic diseases among these women, examining how beliefs and practices influence treatment adherence and healthcare decision-making. For example, kneeling is an important activity but knee OA causes pain with extreme flexion. Adaptive equipment to make kneeling less painful may be an option. Moreover, understanding the impact of family obligations on self-management is crucial, exploring how caregiving roles and family dynamics affect their ability to engage in health-promoting behaviors.

Nursing Significance

With its holistic and patient-centered approach, nursing stands as a cornerstone in providing care that values cultural competence, advocacy, and health promotion. Theory of Caring by Watson (1997), stresses that humans should never be seen as objects but rather understood in their connections with themselves, others, nature, and society. Nurses caring for immigrant populations must possess a clear understanding of the socio-cultural contexts that shape individuals' lives and health experiences. This is supported by Leininger's Theory of Cultural Care (2007) that emphasizes the importance of understanding and integrating cultural aspects into nursing care. This theory advocates for nurses to recognize and respect the cultural beliefs, values, and practices of individuals and communities when providing care (Leininger, 2007). By acknowledging and respecting the cultural beliefs, values, and practices of immigrant communities, nurses can establish trust, build therapeutic relationships, and provide culturally sensitive care that honors the dignity and autonomy of each individual.

Nurses are guided by ethical principles that emphasize providing equitable and compassionate care to all individuals, regardless of their background or circumstances. Immigrant populations often face systemic barriers to healthcare access, including language barriers, cultural differences, and immigration status (Pandey et al., 2021). Nurses across various sectors play a crucial role in advocating for older immigrants with OA. In acute care, they ensure effective treatment and pain management; in public health, they promote awareness and advocate for supportive policies; and in home care, they provide culturally tailored education and support and connect patients with necessary resources. Nurses have a moral obligation to advocate for the rights and well-being of these vulnerable populations and address the structural inequalities that contribute to their health disparities. Anderson's discussion on use of critical social justice

(2010) emerges as a valuable lens. This theory prompts nurses to recognize and address the underlying social determinants that contribute to health disparities, particularly among vulnerable populations (Anderson et al., 2010). Moreover, Reutter and Kushner's (2010) discuss the concept of health equity through addressing the social determinants of health (SDH) within the nursing profession. They highlight the importance of nurses taking proactive steps to tackle the underlying social factors that contribute to health disparities. They explore how nurses can advocate for policies and interventions that address issues such as poverty, education, housing, and access to healthcare, which significantly impact individuals' health outcomes (Reutter & Kushner, 2010).

The knowledge gained from this study will enhance nursing practice by improving pain management and treatment in acute care, developing community based education programs and guiding personalized care plans in long term and home care settings. It will also inform best practices in rehabilitation and geriatric care, optimizing support for older adults with OA. By empowering nurses to provide culturally competent care and advocate for health equity, this research advances nursing knowledge and practice in addressing healthcare disparities among diverse populations.

Knowledge Dissemination

These research findings will be disseminated through multiple channels to ensure broad reach and impact. Using a more traditional knowledge dissemination approach, I have submitted one manuscript to the *International Journal of Qualitative Methods* and the second is in preparation for submission. I will also share my research findings at two upcoming conferences: The Fuse International Conference on Knowledge Exchange in Public Health in June 2024 and the Canadian Association on Gerontology (CAG) conference in September 2024. These

conferences provide valuable opportunities to engage with fellow researchers, policymakers, and practitioners, facilitating knowledge exchange and collaboration.

Moreover, recognizing the importance of community engagement, I will disseminate my research findings through community platforms tailored to older adults and knowledge users. Collaborating with community organizations and cultural centers, I will present my findings at the Indo-Canadian Women's Association that serves SA older women. This organization has assisted with recruitment for the research study. I will use an interactive workshop approach. This format will allow for hands-on activities, engaging discussions, and real-time feedback, making the presentation more relevant and impactful. Additionally, I will offer incentives such as refreshments encouraging greater participation. By utilizing a combination of academic publications, conference presentations, and community engagement initiatives, I aim to ensure that my research findings have a meaningful impact on academic discourse and real-world practice.

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Appendices

Appendix A: Osteoarthritis Interview Guide

1. Please describe your experience of being diagnosed and living with osteoarthritis.

2. How would you describe the physical symptoms and limitations you experience due to osteoarthritis?

3. How do you currently manage your osteoarthritis symptoms? *Probes; herbal/traditional remedies, medication prescribed by physician, exercise, diet.*

4. How do you cope with the challenges (for example pain, limited range of motion, fatigue) associated with arthritis on a day-to-day basis? *Probes: impact on prayer/spirituality, impact on hobbies/doing the things you love to do, impact on work and responsibilities.*

5. How has your mobility been impacted by your osteoarthritis? *Probes: at home, in your neighborhood, traveling to other places outside your neighborhood.*

6. Describe how osteoarthritis has influenced your ability to engage in social activities or maintain social connections? Could you provide some examples?

7. Describe the barriers in accessing necessary support or resources for osteoarthritis management? Probes: health literacy (where do they get their information on arthritis, insurance coverage, medical treatment in Canada or abroad)

8. What are the recommendations you have for service providers who could support women like yourself to manage and live with arthritis?

Appendix B: Socio-demographic Questionnaire

Study Title: Edmonton Neighborhood Study (ENS)

We would like to ask you some questions to help us know you better:

Age

Please specify your date of birth? _____ (day/month/year)

Gender

Are you a…

- □ woman
- □ Prefer to specify_____

Education

How many years of school did you complete (in Canada or any other country)?

_____ years

What is your highest educational qualification?

- □ Primary school (less than or up to Grade 8)
- □ Some secondary/high school (did not complete Grade 12)
- □ Completed secondary/high school diploma or equivalent
- □ College diploma, trades certificate or apprenticeship
- □ University undergraduate degree
- □ University graduate degree (masters or doctoral)
- □ Prefer to specify_____

What is your current marital/partner status?

Are you:

1. Single
2. Married/Living with a partner in a common-law relationship
3. Widowed
4. Divorced
5. Separated
6. Prefer to specify_____

At this time, do you consider yourself to be completely retired, partly retired or not retired?

1. Completely retired
2. Partly retired
3. Not retired

Immigration

In what country were you born? _____

How long have you been in Canada?

Year came to Canada: _____

What is your current status in Canada? Are you a

___ Refugee
___ Immigrant
___ Permanent resident
___ Citizen

People living in Canada come from many different cultural and racial backgrounds. What background do you identify with?

_____

Religious Affiliation

What is your current religion? _____

Language proficiency

What is your first language? _____

What language do you speak at home most of the time? _____

How would you rate your English/French fluency?

a) Proficient b) Able to carry a conversation c) Basic
d) Unable to converse in English

Living arrangement

How long have you lived in this neighborhood? _____

What type of dwelling do you currently live in?

1. House (single detached, semi-detached, duplex or townhouse)
2. Apartment or condominium
3. Seniors' housing (retirement home, assisted living)
4. Hotel, rooming or lodging house
5. Other, specify _____

Do you (or your spouse or your children) own or rent your dwelling?

1. Own
2. Rent

How many people, not including yourself, currently live in your household? _____

Are you currently living:

Alone: 0. No 1. Yes

With your spouse only: 0. No 1. Yes

With adult children only: 0. No 1. Yes

With spouse in an extended three-generation family (that is, spouse, children, and grandchildren):

0. No 1. Yes

Without spouse in an extended three-generation family: 0. No 1. Yes

With other family members (like siblings): 0. No 1. Yes

With friends: 0. No 1. Yes

Do your living arrangements change during the year? no yes

If yes, explain_____

What are the first three digits of your postal code of residence?

For example: if the postal code of your home address is A1A 2B2, please respond A1A.

(Please write or type your answer here) ___

FINANCIAL STATUS

Income:

What are your personal main sources of income in the last 6 months? (Please √ all that apply)

☐ Wages or salaries
☐ Self-employment
☐ Old Age Securities / Pension Plan or any other pension
☐ Personal or family savings
☐ Investments
☐ Social assistance (e.g., Employment Insurance, Alberta Works)
☐ Prefer to specify: _____
☐ I have no income of my own

Perceived financial status

How would you rate your overall financial condition?

1 – Below average

2 – Average

3 – Above average

Are you experiencing financial difficulties?

0 – No

1 – Yes

Access to transportation

Do you own a car? YES NO

Which of the following best describes how you usually get to places that are too far to walk:

You drive your own car

Family member or friend drives you

Public transit (bus, subway, train)

Adapted transportation (e.g., WheelTrans / Handi-Transit)

Taxi

Other: _____

Do you have a valid driver's license? YES NO

Use of glasses, hearing aids and assistive devices

When was your last eye exam? _____ (dd/mm/yyyy)

**If the exam was greater than 1 year ago, evaluator should suggest that they have their vision evaluated yearly.

Do you wear glasses? YES NO

If yes, do you walk while wearing them? YES NO

Do you use a hearing aid?

1. Yes

0. No

Do you have any trouble hearing what is said in normal conversation, even when wearing a hearing aid?

1. Yes

0. No

What type of walking aid do you use on a daily basis outdoors (choose only one)?

□ none □ cane □ rollator (walker with wheels) □ walker (no wheels)

□ other: _____

What distance can you walk on a typical day?

1. indoor only
2. <1 block

3. 2-4 blocks
4. 5-10 blocks
5. unlimited

Have you fallen in the past 12 months (falling includes falling on the ground or some other level, such as a chair)? If no, skip the next question.

1. Yes

0. No

If yes, how many times have you fallen in the last 12 months?_____

Health conditions (please check all that apply):

□ Hypertension

□ Diabetes

□ Heart condition

□ Glaucoma

□ Cataracts

□ Impaired Hearing

□ Stroke

□ Hemiplegia

□ Parkinson's Disease

□ Bronchitis

□ Arthritis

□ Thyroid problem

□ Emphysema

□ Liver disease

□ Ulcer disease

□ Asthma

□Dementia

□ incontinence and/or prolapse of bladder/uterus/rectum

□ Cancer (specify type, location): _____

□ Other (specify):

_____

Appendix C: Walking Interview Guidelines and Observation Form

Edmonton Neighborhood Study

Participant ID:

Interview date:

Interview time:

Interview location:

Total time of walk:

Complete informed consent process, obtain verbal or signed consent.

1. Complete questionnaire

2. Begin interview using the interview guide

3. Before beginning questions about neighbourhood walking barriers and facilitators, ask the participant if they would agree to take a walk in their neighbourhood with you. "I would like to walk with you in your neighbourhood to learn more about your experience walking and moving here. I would like us to take any route that you usually use when you go for a walk, either for leisure or to access destinations that are important for you."

If the participant agrees, turn off the audio-recorder and use the observation sheet below to take notes during your walk with the participant.

Take photographs of objects and physical features in the neighbourhood that the participant identifies as relevant to their neighborhood mobility.

(A digital application to allow for documentation and capturing and storage of photos will be explored for use by the research team)

Watch for signs of fatigue or distress in the participant. You must have a cell phone with you: in case of an emergency call 911. If a participant is fatigued or barriers are experienced to continuing the walk, be ready to return to the primary interview location to continue the interview.

Time of day	

Route description	
Usual purpose of walk	
Total length of time of walk	
Weather conditions	
Physical features/spaces	
Social dimensions	
Participant activities	
Reason for ending walk, if ended for unexpected reasons	
Total number of images taken and types of images (list these) Note: Images of identifiable people cannot be used.	

Appendix D: Information Letter

Title of Research Study: Edmonton Neighborhood Study

Principal Investigator: Jordana Salma, Assistant Professor, University of Alberta

Phone Number: (780) 492-9469

Email: irea@ualberta.ca

Mailing Address: 5-286 Edmonton Clinic Health Academy, 11405 - 87 Ave NW

Edmonton AB, T6G 1C9

We are inviting you to participate in a research study to share your experiences of walking and moving in your neighborhood. The information you provide will help us identify ways to support older women who want to stay active and engaged in their local communities. This is the first phase of a multiphased study, and participants may have the opportunity to participate in subsequent phases. We are seeking between 40-50 participants who are willing to take part in each phase, including the walking interview phase of the study.

As a participant in this study, we will ask you to:

Participate in one in-person walking interview, which can take up to two hours. The interviews will be scheduled at a time and location that is most convenient for you and in the language you feel most comfortable speaking. The interviews can take place either at your home or in a public space in your neighborhood, and they will comprehensively capture your experiences. The walking interviews will not be recorded, but the interviewer will take detailed notes. In the event that the in-person interviews are interrupted or run over the allotted time, we may ask follow-up questions via phone.

You will be asked to take photographs of your neighborhood. These photographs will show us what makes you feel comfortable or uncomfortable while walking in your neighborhood . You will use your smartphone to take pictures that illustrate your experiences with neighborhood walkability, pointing out objects or structures that the interviewer should capture using a research smartphone. You may also send pictures taken by you or other family members that are not captured in the walking interviews via WhatsApp or text message to a secure research smartphone.

The stories and photographs you share will be used to:

Create reports about older women's experiences of living in Edmonton neighborhoods. These reports will be shared with: (a) researchers, (b) health and social service providers, (c) policymakers, and (d) the general public.

Possible Benefits: There are no major benefits to you for participating in this study. You will have the opportunity to walk around with the research team members, which can improve your physical and mental health. The information you provide will help us understand the neighborhood experiences of older women in Canada.

Possible Risks: Participating in this study poses no known risks, but you may feel uneasy about disclosing your thoughts and emotions. Participating in walking interviews involves very minimal risks, such as tiredness, muscle discomfort, or the possibility of falling.

Confidentiality: We will ensure that your information remains confidential. Any information that could be used to identify you, your family, or others in your social network will be removed from the stories and photographs. We will collect your names, ages at the time of collection, phone numbers, addresses, and email addresses, which will only be used for descriptive analysis of the data. Your answers to the questions will be kept private and will only be viewed by the researchers and research staff.

Any non-participants who are captured in photographs taken during this phase of the study or received from the participant or their family will have their faces blurred to ensure their privacy. Photos of children will not be included for dissemination purposes. All information that we collect from you will be kept in a secure location at the University of Alberta for five years. After that time, we will destroy any data that contains information that could be used to identify you. We will remove all information that could potentially identify you or others from de-identified data, which will be securely stored indefinitely by the research team for future use beyond this study. Hard copies of consent forms will be stored in locked cabinets in the research office, and digital data will be stored on password-protected university computers, available in a shared drive with limited access for research team members, and on password-protected hard drives. If you are interested in learning about the study's findings, you can contact one of the researchers listed at the top of this form at least 6-9 months after your participation.

Additional Contacts: You can contact Jordana Salma if you have additional questions: Phone: (587)-783-9119 or email: sjordana@ualberta.ca. The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta (Pro00123689). If you have questions about your rights or how research should be conducted, you can call (780) 492-2615. This office is independent of the researchers.

Voluntary Participation: You are free to withdraw from the research study at any time by contacting Jordana Salma. You can withdraw before or during an interview. You can refuse to answer questions. You can request that the audio-recorder be turned off. You do not need to share all the photographs you take with the research team. Your consent will be sought for each individual photograph before using it in any report or presentation. You do not need to give any

reasons for leaving the study. You have two weeks from when you are interviewed to withdraw all the data you provided.

Payment of Expenses: We will give you a $50 honorarium in the form of a grocery gift card (Walmart/Superstore) for participating in this project. Even if you withdraw from the study, you will still get the $50 grocery gift card.

Expense Reimbursements: $10-30 transportation reimbursement will be provided when discussions or interviews occur away from a participant's home. The higher amount is for participants who might not drive, be able to take public transportation and require Uber, for example, to attend a data collection site.

The maximum is $50 per participant honorarium + $30 transportation = $80.

CONSENT FORM

Title of Research Study: Promoting Outdoor Mobility via Enhancing Neighborhood Walkability for Racialized Older Women: A Community-Based Participatory Project

Principal Investigator:

Jordana Salma, Assistant Professor, University of Alberta

Phone Number: (780) 492-9469

- Do you understand that you have been asked to be in a research study?
  - Have you read and received a copy of the attached Information Sheet?
  - Do you understand the benefits and risks in taking part in this research study?
  - Have you had an opportunity to ask questions about the study?
  - Do you understand that you are free to withdraw from the study at any time?
  - Has confidentiality been explained to you?
  - Do you agree to have interviews audio-taped?
  - Do you understand who will have access to the information you provide?

I agree to take part in the one interview related to this study:

YES ¨ NO ¨

I consent for the use of photos for the purpose of data analysis

YES ¨ NO ¨

I consent for the use of the photos for research publications and teaching purposes

YES ¨ NO ¨

I understand that there are minimal risks associated with participating in this study that are outlined in the information letter

YES ¨ NO ¨

I do not consent for the use of photos

YES ¨ NO ¨

I agree to take part in an additional interview in a different season (spring or winter):

YES ¨ NO ¨

I allow the researchers to use de-identified data for further research beyond this study:

YES ¨ NO ¨

I would like to be contacted to participate in future walking programs:

YES ¨ NO ¨

If yes, please provide an email or mailing address: _____

Signature of Research Participant: _____

OR

Verbal consent of Research Participants given

Printed Name of Research Participant: _____

Date: _____

I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate:

Signature of Investigator: _____ Date: _____

Signature of Interpreter: _____ Date:_____

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