Culturally Safe Falls Prevention Programs for Inuvialuit Elders

By

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Abstract

In Canada, falls are one of the leading causes of injury and deaths for seniors. These types of injuries can typically be avoided through falls prevention programs, and past studies suggest that these health services have significantly reduced seniors' falls risk and rates in Canada. Despite the abundance of falls prevention research, practices and programs available in the country, Aboriginal Elders remain overrepresented in fall-related injury and fatality rates. The elevated rates of falls for Aboriginal Elders indicate that current falls prevention programs and standards may not be reaching those most vulnerable to fall hazards and injuries. My thesis is written in the publishable paper format and is comprised of two papers. Using an exploratory case study methodology in paper one, I investigated the social determinants of health that Inuvialuit Elders and LFPPs identify as factors that increase, decrease, or have no effect on the likelihood of an Inuvialuit Elder experiencing a fall. Together, we found that personal health status and conditions, personal health practices and coping skills, physical environments, social support networks, and access to health services increase Inuvialuit Elders likelihood of experiencing a fall, health practices and coping skills and access to health services decrease Inuvialuit Elders likelihood of experiencing a fall, and culture has no affect on the likelihood of Inuvialuit Elders experiencing a fall. In paper two, I used a participatory action research approach informed by postcolonial theory to examine what current falls prevention recommendations are offered by local falls prevention programmers (LFPPs) in order to reduce fall rates among Inuvialuit Elders in Inuvik, Northwest Territories, Canada; and to understand how falls prevention programs for Inuvialuit Elders can be co-created with participants to be culturally safe. In it, I provide the recommended strategies of developing and implementing a culturally safe falls prevention program for Inuvialuit Elders, as suggested by the LFPPs and Inuvialuit Elders who participated

in the research. Taken together, the papers in this thesis make it apparent that research concerning falls prevention for Aboriginal Elders and falls prevention programs continues to be influenced by colonial practices. As a result, there is a demonstrated need for program development and research in this area to work towards reducing health disparities and challenging colonial practices.

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Chapter 1: Introduction

Internationally, there is an expected growth of senior populations in most developed and developing countries (Hill, Pinto, Nathens, & Fowler, 2014; Naraynsingh, Sammy, Paul, & Nunes, 2015; Semonin-Holleran, 2015; Stewart-Williams et al., 2015). Canada is no exception. According to Statistics Canada (2015), it is estimated that one in four Canadians will be over the age of 65 by 2051, meaning that the senior population will become one of the most dominant demographics in the country (PHAC, 2016). This projected growth of the Canadian senior population means that the prevalence of this group experiencing injuries, specifically fall-related injuries, is also anticipated to increase (Hill et al., 2014; Peel, Kassulke, & McClure, 2002). Thus, due to the growing rate of fall-related injuries and fatalities among Canadian seniors (Hill et al., 2014; Registered Nurses Association of Ontario [RNAO], 2005) and the expected further increase, it is clear that this population is in need of falls prevention programs (Beauvais & Beauvais, 2014; Hill et al., 2014; Gillespie et al., 2012; Naraynsingh et al., 2015; RNAO, 2005; Semonin-Holleran, 2015; Statistics Canada, 2012a; Stewart-Williams et al., 2015).

Evidence has shown that falls prevention programs are beneficial in reducing falls amongst the elderly (Beauvais & Beauvais, 2014; Gillespie et al., 2012); however, not all groups are equally vulnerable to injury. Studies have shown that Aboriginal peoples (i.e., First Nations, Métis, and Inuit) in Canada experience injuries at higher rates than non-Aboriginal Canadians (Bjerregaard, Young, Dewailly, & Ebbson, 2004; Health Canada, 2002b). Yet, there continues to be little known about Aboriginal seniors' rates of falls (Hill et al., 2014). Reading and colleagues (2011) found that falls are the leading cause of injury-related death for First Nations seniors in British Columbia; however, the only data available on Inuit Elders in Canada emphasizes their exceptionally low life expectancy in comparison to non-Inuit seniors (Health Canada, 2002b), and provides a generalized overview of their injury rates (i.e., there is limited information

pertaining to fall-related injuries among the Inuit) (Bjerregaard et al., 2004; Health Canada, 2001). Thus, given the overrepresentation of Aboriginal peoples' poor outcomes on almost every health measure, including injury (Loppie-Reading & Wien, 2009), it is reasonable to assert that Inuit Elders are also over-represented in fall-related injuries and fatalities, and are therefore in need of falls prevention programs.

Current falls prevention programs available to Canadians have two significant shortcomings. First, scholars have failed to account for the influence social determinants of health (e.g., housing conditions, employment and educational opportunities) (Richmond, 2009) have on the likelihood of Inuit Elders experiencing fall-related injuries and fatalities. Second, the ways in which falls prevention programs can be made to be culturally safe [i.e., when a researcher or program provider ensures that participants' contextual, cultural, historical, and social experiences, as well as their influence on participants' day-to-day lives, are acknowledged and respected (Fulcher, 2001; Giles, Hognestad, & Brooks, 2015)] has also escaped academic attention. As a result, to better understand falls and falls prevention program, I decided to focus on the experiences of Inuvialuit Elders in Inuvik, Northwest Territories (NWT).

The Town of Inuvik, which means "Place of People" in Inuvialuktun, was officially established by the Canadian government in 1954 (Town of Inuvik, 2017). It was built with the intention of replacing the Hamlet of Aklavik, which was often subject to flooding and erosion and was thus not viewed as an ideal location, as the administrative centre of the Western Arctic (Town of Inuvik, 2017). It did not take long for the community to grow, as Inuvialuit (a sub-population of Inuit), Gwich'in (First Nations), Métis, and non-Aboriginal peoples moved to Inuvik as result of its economic boom. From the early-1970s to late-1980s, oil and natural gas exploration provided many employment opportunities; however, due to low international oil

prices, reduction of government subsidies, and local resistance to oil exploration, the oil industry in Inuvik collapsed by the 1990s (Town of Inuvik, 2017).

Inuvik is a community 1086km northwest of Yellowknife and located on the Mackenzie River Delta (NWT Bureau of Statistics, 2016a). Inuvik has a population of 3,170, of which 2,059 individuals self-identify as Aboriginal (NWT Bureau of Statistics, 2016b). Recent statistical demographic profiles of these groups are unavailable, but Statistics Canada (2007) has cited Inuvialuit representing 38.9% of Inuvik's population, Gwich'in representing 18.4%, and Métis representing 4.7%. The NWT Bureau of Statistics (2016b) also identified that Inuvik has an elderly population (i.e., individuals 60 years old and older) of 359 people (no breakdown by ethnicity is available). Aboriginal Elders and non-Aboriginal seniors thus comprise approximately 11.3% of Inuvik residents (NWT Bureau of Statistics, 2016b).

I conducted the research for my Master's of Arts, which I have written in the publishable paper format and appears within this thesis, in Inuvik from September 19, 2016 to November 30, 2016. In Inuvik, I conducted research with community members to better understand the factors that influence Inuvialuit Elders' falls and the ways in which falls prevention programs might be co-created to meet Inuvialuit Elders' specific needs. The body of literature on falls prevention focuses mostly on non-Aboriginal populations. The research that does address Aboriginal Elders is focused on First Nations Elders; as a result, there is little information that pertains to Inuit Elders. Given that Inuit experience a disproportionate burden of ill health (Public Health Agency of Canada [PHAC], 2016) and the shortest life expectancy in Canada (Statistics Canada, 2015; Wilson, Rosenberg, Abonyi, & Lovelace, 2010), there is a pressing need to understand a form of preventable injury for Inuit Elders: falls.

My first paper addressed the question, “Which social determinants of health (SDH) do stakeholders (i.e., LFPPs and Inuvialuit Elders) believe most affect the likelihood of Inuvialuit Elders’ falls?” My second paper addressed the questions, “What are the current falls prevention recommendations (from research participants) to decrease fall rates among Inuvialuit Elders?” and “How can falls prevention programs for Inuvialuit Elders be co-created (with research participants) to be culturally safe?” Below, I provide an overview of the literature upon which I drew, the epistemology, theoretical framework, methodology, methods, and analysis that I used to provide insights into the falls prevention of Inuvialuit Elders, as well as a brief summary of the two papers that comprise this thesis.

Literature Review

To establish where my research is situated within the current body of knowledge, my literature review will examine the state of Aboriginal Elders’ health. I will also address the state of Aboriginal Elders’ falls. I will then explain the BEEEACH model and its relevance to falls prevention in Canada. I will then define the social determinants of health. Finally, I will explain the concept of cultural safety, its benefits, its challenges, and how I applied it to my research.

State of Aboriginal Elders’ Health

In comparison to non-Aboriginal populations, Aboriginal populations experience tremendous physical and social health inequalities. Aboriginal peoples not only experience high rates of chronic (e.g., diabetes, cardiovascular disease), infectious diseases (e.g., tuberculosis), physical inactivity, and mental health issues (e.g., suicide, drug abuse, and addiction) (Health Canada, 2012; PHAC, 2016; Somogyi, Barker, MacLean, & Grischkan, 2015), but they also often experience inadequate access to healthcare, limited educational and employment

opportunities, poor housing conditions, and food insecurity (Gofin & Gofin, 2011; Loppie-Reading & Wien, 2009; PHAC, 2016; Richmond, 2009).

Similarly, Aboriginal Elders in Canada have been found to suffer from more health inequalities in comparison to their non-Aboriginal counterparts (Beatty & Berdahl, 2011; Wilson et al., 2011). Recent evidence has even indicated that "Aboriginal seniors are among the most neglected societal class because their increasing multiple physical and mental health problems and increasingly poor socio-economic supports have forced them into even more challenging and dependent situations" (Beatty & Berdahl, 2011, p. 1), thus putting Aboriginal Elders at a significant disadvantage with regard to their health.

While the health disparities experienced by Aboriginal Elders has been widely studied, there is still limited research regarding these populations' experiences with falls and engagement with falls prevention programs. Current falls prevention research with Aboriginal peoples in Canada has focused on the experiences of First Nations Elders; Métis and Inuit Elders' fall risk and fall-related injuries and/or fatalities remain understudied in this area of study.

Status of Falls among Aboriginal Elders

Injury, especially fall-related injury, in Canada is a serious public health concern. According to PHAC (2014), "[f]alls remain the leading cause of injury-related hospitalizations among Canadian seniors, and between 20% to 30% of seniors fall each year (p. III). Evidence also suggests that falls result in upwards of 95% of all hip fractures, resulting in death in approximately 20% of these cases (Ioannidis et al., 2009; Jiang et al., 2005). PHAC (2014) has also indicated that seniors who experience a fall or fall-related injury can experience future negative mental health outcomes, such as fear of falling, depression, immobilization, isolation, and loss of autonomy. Therefore, it is evident that falls prevention programs are needed in order

to prevent falls, and the negative health outcomes associated with this type of injury, among Canadian seniors.

Despite the abundance of data regarding fall rates, fall-related injuries and fatalities, and falls prevention for seniors in Canada, similar information pertaining to Aboriginal Elders in Canada is significantly lacking. Recent evidence has suggested that Aboriginal Elders' fall and fall-related injury rates will increase; however, these findings came out of a single study that had a focus on First Nations Elders in British Columbia (Reading et al., 2011). Similar data among other Aboriginal populations (e.g., Métis and Inuit Elders) remains absent from the literature, as well as information regarding the factors that either directly or indirectly influence older Métis and Inuit adults' likelihood of experiencing a fall. These findings thus emphasize the need to better understand Aboriginal Elders' experiences of falls.

Falls Prevention Standards in Canada

Holistic, multifactorial falls prevention programs are considered the best approach for reducing Canadian seniors' fall risk and rates (Scott et al., 2007; Scott, 2012). Strategies and Actions for Independent Living (SAIL) is one such falls prevention program. SAIL was developed in British Columbia and is still used in the province to reduce seniors' risk of falling and sustaining injury (Government of British Columbia, 2017). The multifactorial program includes "a falls prevention training program for community health workers (CHW) and home health professionals (HHP), a falls monitoring and reporting system, the implementation of a client-centered risk assessment and prevention tool, and protocols for identifying and addressing those determined to be at high risk for falls" (Government of B.C., 2017, para. 2). It thus requires LFPPs to use various prevention strategies in order to reduce local seniors' fall and fall-related injury rates.

Similar to SAIL, other falls prevention programs in Canada typically include a number of prevention actions, most of which are in reference to the Canadian Falls Prevention Curriculum's standard: the BEEEACH model (Scott et al., 2007; Scott, 2012). According to the BEEEACH model, there are seven components that should be included in current falls prevention programs (Scott, 2012). The first component, behaviour change, identifies the need for falls prevention practitioners and programmers to get "buy-in" from the participants; that is, practitioners/programmers need their participants to support the falls prevention practices they recommend and must sustain these long-term behaviour changes (Scott, 2012). The second component, education, requires practitioners to provide falls prevention education to those at risk of falling (i.e., seniors) and to those who assist in mitigating falls (i.e., family members, long-term care and homecare workers, etc.) (Scott, 2012). The third component of the model, equipment, expects programmers to train seniors (and their caretakers) on how to use an array of assistive and mobility devices, as well as conduct equipment safety checks to ensure that their aides will not harm them (Scott, 2012). The fourth component, environment, emphasizes that practitioners should assess (and potentially modify) seniors' home, outdoor, and public environments in order to reduce the risk for falls or fall-related injury (Scott, 2012). The model's fifth component, activity, requires that practitioners include physical and social activity into their falls prevention programs as strategies to overcome physical inactivity and social isolation (Scott, 2012)—factors that have been found to negatively impact seniors' overall health and well-being. The sixth component, clothing and footwear, expects programmers to inform seniors on clothing and footwear that is likely to increase their likelihood of experiencing a fall and suggest safer options (Scott, 2012). The last component of the model, health management, emphasizes the need for falls prevention practitioners to promote effective health management

practices that are likely to decrease seniors' fall risk (Scott, 2012). This includes recommending seniors to regularly visit their general health practitioner, to seek out specialists (if needed), to have annual medication reviews, etc. (Scott, 2012).

Considering these components, it is not surprising that BEEEACH model programs have been successful in reducing Canadian seniors fall risk and rates (Scott, 2012); however, there has been no attempt to understand if BEEEACH model-related falls prevention programs are relevant to Aboriginal Elders in Canada. This gap in falls prevention literature is further discussed in chapter three of my thesis.

SDHs

While there are a number of articulations of the social determinants of health (SDH) [e.g., the World Health Organization (WHO) and PHAC), it is generally understood that individual health is influenced by various factors. WHO (2017) defined the SDH as:

> the conditions in which people are born, grow, live, work and age, and the wider set of forces and systems shaping the conditions of daily life. ("What are SDH?" section, para. 1)

In this vein, these conditions include physical, mental, social, and contextual factors that may positively or negatively influence individuals' overall health and well-being (Davidson, 2014; WHO, 2017).

Interestingly, PHAC (2011) indicated that the most important determinants of health among Canadians are income and social status; social support networks; education; employment and working conditions; social environments; physical environments; personal health practices and coping skills; healthy child development; gender; and culture. These factors are believed to address poor health outcomes and health disparities among all Canadians; however, the SDH and

the effect of SDH in the lives of First Nations, Métis, and Inuit peoples in Canada need to be better understood (Loppie-Reading & Wien, 2009). Loppie-Reading & Wien (2009) have established the social determinants of Aboriginal health, which they separated into three categories: proximal determinants of health, intermediate determinants of health, and distal determinants of health. Proximal determinants of health are "conditions that have a direct impact on physical, emotional, mental or spiritual health" (p. 5), and include factors such as health behaviours, physical environments, employment and income, education and food insecurity. Intermediate determinants of health, which are often thought of as the origination of the aforementioned determinations, comprise of factors like healthcare systems, educational systems, environmental stewardship, cultural continuity, and community infrastructure, resources and capacities. Lastly, distal determinants of health "represent political, economic, and social contexts that construct both intermediate and proximal determinants" (p. 20). These determinants include elements such as colonialism, racism, social exclusion, and self-determination.

While the Aboriginal social determinants of health have been established, information pertaining to these determinants and their effect on Aboriginal peoples' experiences with falls and fall-related injuries and/or fatalities is non-existent. As a result, I discuss these issues further in chapter two of my thesis.

Cultural Safety

Culturally safe strategies have become widely used within healthcare and health-related research since the early 2000s. Originating in New Zealand, the concept was developed by nurse educators in order to address concerns of health inequities and inequalities between Aboriginal and non-Aboriginal New Zealanders (Giles & Darroch, 2014; Giles et al., 2015). Irihapti Ramsden (2002), a Māori nursing scholar and leader in the development of cultural safety,

explained it as “the notion of the nurse as a bearer of his or her own culture and attitudes, and consciously or unconsciously exercise[ing] power” (p. 109). Cultural safety has been further described as concept that “encourage[s] nurses to reflect on their own personal and cultural history and the values and beliefs they bring in their interaction with patients” (Anderson et al., 2003, p. 198). In this vein, cultural safety can be considered a tool that shifts interactions between researchers and research participants, healthcare providers and patients, program developers and program participants, or policy-makers and those affected by the policies away from dominant Western biomedical forms of knowledge to non-dominant forms of knowledge in order to better meet participants’ and patients’ needs (Smye & Browne, 2002).

There are four key principles to employing a culturally safe approach to nursing (Nursing Council of New Zealand [NCNZ], 2011), which arguably could be applied to other health initiatives and research. The first principle identifies the need for researchers/practitioners to recognize the differences between themselves and their participants/patients (e.g., distinctions in age, gender, sexual orientation, culture, health perceptions, etc.) (NCNZ, 2011). The second principle requires researchers/practitioners to acknowledge the identified differences can influence the power dynamics present in research and practice (NCNZ, 2011). The third principles encourages researchers/practitioners to identify the power imbalances present in healthcare/health-related research by acknowledging the cultural, historical, political, social, and economic contexts that have influenced this dynamic (NCNZ, 2011). The last principle focuses on the ability to examine his/her own culture and practice to address the potential to further contribute to unequal power relationships (NCNZ, 2011).

Considering the aforementioned principles, it is evident that cultural safety moves beyond terms such as cultural competency, cultural appropriateness, or cultural sensitivity. It is evident

that cultural safety enables researchers to become aware of their personal biases and prevents them from imposing their values and beliefs onto those with whom they are conducting research with or providing healthcare services to (Giles et al., 2015; Ramsden, 2002). Cultural safety also permits scholars to analyze how their exercise of power may influence interactions with respect to their participants or patients (Baker & Giles, 2012; Brascoupé & Waters, 2009; Giles et al., 2015; Ramsden, 2002). Lastly, a culturally safe approach emphasizes that everyone has a culture, not simply those from marginalized or non-dominant groups (Smye & Browne, 2002); which is important because it challenges the normalization of whiteness, as well as encourages people to critically reflect on their cultural practices and beliefs (Giles et al., 2015). Cultural safety is therefore an important strategy for researchers and practitioners to use whilst working in the context of injury prevention, especially falls prevention, as it is a practical and ethical practice that ensures equitable resources and health services are provided to marginalized populations, including Aboriginal peoples.

As the prior section made evident, there are many benefits to adopting a culturally safe approach. However, using a culturally safe approach is not without its challenges (see Brascoupé & Waters, 2009; Cortis, 2008; Gerlach, 2012; Giles et al., 2015). Issues regarding the simplicity and generality of cultural safety appear to be the most common critiques of this approach. In terms of its simplicity, critics have argued that cultural safety is complicated and challenging to apply in research and practice (Gerlach, 2012; Hughes, 2006). Cultural safety, however, is not meant to be simplistic (Smye & Browne, 2002). Rather than reducing cultural safety to a "cultural checklist" (Gerlach, 2012), culturally safe approaches to research and practice should be conducted in the following way:

> [I]n a way that not only respects the culture of the intended audience, but also accounts for the complex interweaving of historical, social, economic, and political factors that contribute to power structures that exist between those who carryout interventions and research and those who receive them. (Giles et al., 2015, p. 547)

Cultural safety is thus intended to evoke researchers' critical thinking skills, and encourage them to better understand a population's culture in relation to various contextual factors (Browne, 2005; Giles et al., 2015).

As for the generality of cultural safety, critics have also argued that it is difficult to apply to populations outside its original context (Johnstone & Kanitsaki, 2007); that is, cultural safety originated from the exploration of disparities and inequities between New Zealand's Māori (the Aboriginal peoples) and Pākehā (the non-Aboriginal peoples) populations (NCNZ, 2011; Ramsden, 2002). This argument, however, has been refuted by researchers using cultural safety who have argued that it is applicable to Aboriginal populations outside of New Zealand (see Anderson et al., 2003; Baker & Giles, 2012; Brascoupé & Waters, 2009; Browne et al., 2009; Doane & Varcoe, 2005; Giles & Darroch, 2014; Pauly, McCall, Browne, Parker, & Mollison, 2015; Reimer-Kirkham et al., 2002; Smye & Browne, 2002), which has been found to be especially true among Aboriginal populations in Canada. Aboriginal peoples in Canada have had negative experiences similar to New Zealand's Aboriginal peoples, such as an array of health disparities as a result of colonization, marginalization, and discrimination in healthcare services and practices (Browne & Varcoe, 2006; Doane & Varcoe, 2005; Gerlach, 2012). Considering these similarities, researchers thus have argued that cultural safety can be used to bring Aboriginal peoples' perspectives to research and practice in Canada, as well as highlight the past and present cultural and contextual factors that influence their overall health and well-being.

Adopting and implementing a culturally safe approach to my own research was a challenging process; however, I did my best to follow the suggestions of researchers and practitioners who have used a similar approach to their own studies and practice. For example, in an attempt to better understand whose knowledge is privileged within falls prevention research and practices, and to challenge any underlying relations of power in this field of injury prevention, I examined ways in which my cultural background may have influenced my research and my interactions with Inuvialuit Elders. In doing so, I did my best to prevent myself from "othering" [i.e., the process of perceiving a marginalized individual(s) as fundamentally different or inferior (Boreus, 2006; Pickering, 2001; Krumer-Nevo & Sidi, 2012)] Inuvialuit knowledge and culture, as well as avoid perpetuating pre-existing unequal relations of power (e.g., avoid preventing Inuvialuit peoples exercising their power and right to make their own decisions regarding their health and well-being). Researchers, such as Brascoupé and Waters (2009), Gerlach (2012) and Giles et al. (2015), have also strongly implied that for cultural safety to be effective, it must be applied throughout the entire research or practice process. I therefore included these cultural safety strategies in every stage of my research. As a result, I sought to understand the factors that affect their likelihood of falling, and to create a space for Inuvialuit Elders (and LFPPs) to exercise their power in determining the cultural safety of a falls prevention program tailored for Inuvialuit Elders.

Epistemology

I used a constructionist epistemology throughout my research process. Constructionists assert that "all knowledge, and therefore all meaningful reality as such, is contingent upon human practices being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context" (Crotty, 1998, p. 42).

In other words, the premise of constructionism is that the meanings individuals create (or *construct*) are achieved through their interactions with social objects, social beings, and their social environment (Crotty, 1998). Considering this, Aboriginal peoples' and non-Aboriginal peoples' social worlds are indeed different. The contexts within which Aboriginal and non-Aboriginal peoples live vary based on their lived experiences, and it is evident that First Nations, Métis, and Inuit peoples have greater health disparities that influence their overall quality of life and well-being in comparison to non-Aboriginal peoples in Canada.

A constructionist approach enabled me to identify historical and socio-cultural contexts that have formed LFPPs' and Inuvialuit Elders' understandings of falls, fall-related injuries or fatalities, and falls prevention. By using this approach, I was able to recognize how colonialism has shaped the construction of meanings regarding falls prevention interventions and programs for Aboriginal Elders—specifically those for Inuvialuit Elders. Lastly, the constructionist approach provided me the opportunity to better understand how LFPPs and Inuvialuit Elders construct meanings of success in terms of culturally safe programming for Inuvialuit Elders.

Theoretical Framework

Postcolonial Theory

With influences from Marxism, postmodernism, and poststructuralism, the conceptualization of postcolonial theory allows researchers to dissect, depict, and demystify colonialism (i.e., the egocentric and capitalistic venture that allowed dominant Western nations to claim new territorial settlements, develop their resources by exploiting others, and govern the inhabitants of occupied lands) (Boehmer, 1995, Gandhi, 1998; Judd, 1996; Scott, 2014). Theorists such as Partha Chatterjee, Ranajit Guha, Franz Fannon, and Edward Said argued that this theoretical approach allows researchers to attend to the experiences of colonized subjects

(Scott, 2014). Their work has also advanced the understanding of how colonialism significantly influenced the colonizer's and the colonized's perspectives of each other and their social worlds (McLeod, 2000). Postcolonial theory also encourages scholars to critique dominant colonial discourses, while simultaneously addressing issues such as race, ethnicity, and gender (McEwan, 2009; Scott, 2014). Postcolonial theorists thus aim to acknowledge and represent the formerly colonized and to expose the cultural, political, and economic damage experienced by these individuals as a result of colonization and its legacies (Gandhi, 1998; Scott, 2014).

A postcolonial theoretical framework is most appropriate for researchers analyzing the effects of colonial discourses on cultures and societies; however, it is evident that scholars may experience a number of challenges while using postcolonial theory. First, critics have argued that researchers from, or descendants of, dominant Western nations should not use postcolonial theory because of their positions of privilege (Hamadi, 2014). This argument has been refuted by some researchers using postcolonial theory who have argued that they are not producing knowledge and ideas from the standpoint of the colonizer; in contrast, they believe that they are engaging with a reflexive approach to make their personal biases and perceptions publicly known and let subjugated voices be heard (Scott, 2014). Second, it has been argued that postcolonial theory has homogenizing and generalizing tendencies (McLeod, 2000); however, this argument goes against the general premise of postcolonial theory. Researchers are expected to use postcolonial theory to gain a better understanding of specific populations and the community members' unique experiences with colonialism, and they do not generalize these groups' experiences into larger sociological and historical accounts (Scott, 2014).

After considering the strengths and weaknesses of postcolonial theory, I believe that the strengths of this theoretical framework outweigh its weaknesses. Its ability to enable researchers

to challenge and critique dominant Western discourses, as well as provide colonized groups with the opportunity to regain and reaffirm their power and voices, made it a suitable choice for my research. To ensure that my research employs the strengths of postcolonial theory, I situated it within a particular approach to this theory: Decolonization. I also situated my work within a Canadian articulation of this approach.

Decolonization

Although some theorists and scholars may argue that the reign of empires in countries such as Canada have passed due to the development of constitutional human rights orders (McLeod, 2000), it is difficult to ignore that populations (i.e., the Aboriginal populations) underwent over five hundred years of colonization and assimilations tactics (Battiste, 1998; Kelm, 2004). The use of these practices resulted in Aboriginal peoples experiencing radical changes to their traditions and everyday life; however, it is clear that Aboriginal peoples continue to be affected by the negative impacts of colonialism (Battiste, 1998; Coleman, Battiste, Henderson, Findlay, & Findlay, 2012; Kelm, 2004). Memmi (1969) identified racist and derogatory strategies that colonizers have used, all of which apply to the Canadian context:

> (a) stressing real or imaginary differences between the racist and the victim; (b) assigning values to these differences to the advantage of the racist and the detriment of the victim; (c) trying to make these values absolutes by generalizing from them and claiming that they are final; and (d) using these values to justify any present or possible aggressions or privileges. (p. 186)

It can be argued that colonial discourses, values, and power are still exercised on Aboriginal peoples (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). This is a significant issue because the dominant Eurocentric ideals of non-Aboriginal Canadians continue to frame the nation's

legislation and policies towards education, employment, healthcare, language, and knowledge (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). Indeed, scholars have often failed to take into account "the ecological context of [Aboriginal peoples], their social and cultural frames of reference [which embody] their philosophical foundations of spiritual interconnected realities…and their current needs for economic development and change" (Battiste, 1998, p. 21).

While the Canadian government has made some attempts to recognize and respect Aboriginal people's rights, little has been done to facilitate decolonization [i.e., the long process of undoing colonialism by separating Aboriginal people's knowledge, traditional practices, and research processes from the colonizer's power and predominant discourses, and by having Western policy-makers, practitioners, researchers, etc., respect Aboriginal people's knowledge in order to better understand the concerns within their social world and to work with them to develop potential solutions (Crawford, 2002; Smith, 1999)] for this population. In fact, in Canada, there continues to be no legislation or policies directed to maintaining Aboriginal people's language and knowledge (Battiste, 1998; Coleman et al., 2012). This absence of Aboriginal culture in the nation's legislation results in the maintenance of the belief that Aboriginal peoples are inferior to non-Aboriginal peoples, and that their knowledge should continue to be discredited (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). This is also a significant barrier for Aboriginal populations in Canada because it permits non-Aboriginal scholars, government officials, policy-makers, etc. to continue disrespectful practices (e.g., assimilation policies enacted by the government), which prevents advancements in moving away from dominant Eurocentric discourses in the everyday lives of Aboriginal peoples (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). Further, that Aboriginal knowledge being deemed illegitimate in relation to non-Aboriginal knowledge has led to some Aboriginal peoples

accepting the negative impacts of these colonial discourses (e.g., the growing disparity rates in areas of their lives, such as health and education) as inevitable (Auer & Andersson, 2001; Battiste, 1998; Coleman et al., 2012; Smith, 1999). Therefore, decolonization strategies must be used for Aboriginal peoples' knowledge to be accepted in both the academic community and the general public, as well as for them to exercise power.

It is important to recognize decolonization is a two-way street. While Aboriginal peoples may seek to rid their lives of some or all Eurocentric practices, non-Aboriginal peoples, too, have to change. As a result, decolonization involves bidirectional change (Battiste, 1998; Coleman et al., 2012). Importantly, however, it is impossible for decolonization to occur without Aboriginal peoples playing a leading role in this process (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). Therefore, through Aboriginal peoples' involvement in the decolonization process, it would ensure that Aboriginal peoples are able to address their worldviews and concerns through a lens that accurately represents their perspectives (Battiste, 1998; Coleman et al., 2012; Kelm, 2004; Smith, 1999), making it clear that such an approach is needed in academia. An additional decolonization strategy that could assist Aboriginal peoples in having their knowledge represented and used in current scholarly literature would be to have both Aboriginal and non-Aboriginal scholars acknowledge the "colonial shadow" that has been, and continues to be, cast on studies related to Aboriginal peoples (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). By acknowledging this colonial shadow, both parties can determine which areas in Aboriginal people's lives are presently being influenced by the negative effects of colonialism and establish what steps should be taken in order to mitigate these effects. Therefore, it is clear that decolonization strategies are necessary because it enables Aboriginal peoples (with or without the assistance of non-Aboriginal peoples) to develop strategies that may help them recover

and/or strengthen their cultures and languages, as well as make it possible for Aboriginal peoples to use their knowledge to overcome the disadvantages they currently face in Canadian society (Battiste, 1998; Coleman et al., 2012; Kelm, 2004).

Aboriginal peoples in Canada will nevertheless experience challenges with achieving complete decolonization because the process itself is easier to accomplish in theory than it is in reality (Battiste, 1998; Coleman et al., 2012). In theory, Aboriginal peoples could take the aforementioned strategies and expect to see positive results in the future; however, due to decolonization being a "complex and continuing process…[that is not] achieved automatically at the moment of independence" (Ashcroft, Griffiths, & Tiffin, 2007, p. 59), it is likely that Aboriginal peoples will continue to face resistance in having their culture, traditions, languages, and knowledge present in Canadian legislation, policies, and research (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). Even though decolonization frameworks have been used to study many areas of interest, such as education, healthcare systems, language, and knowledge translation (Battiste, 1998; Coleman et al., 2012; Kelm, 2004), there is currently no research that has used this approach in the creation of culturally safe falls prevention programs for Inuvialuit Elders.

A postcolonial approach informed my second paper, which helped me determine the challenges with falls prevention programs and if those available in Inuvik are culturally safe for Inuvialuit Elders.

Methodology

I used a different methodology for each paper in my thesis. In paper 1, I used an exploratory case study that was informed by participatory research principles. In paper 2, I used participatory action research. I provide an overview of both of these methodologies below.

Paper One

Researchers who use participatory research approaches involve research participants, including community stakeholders and members, in all areas of the research design (Maguire, 1993; Park, 1993; Stoecker & Bonacich, 1992). Following the principles of a participatory methodology, I established a local research advisory board of three stakeholders who live in Inuvik: Crystal McPhail, a Regional Occupational Therapist for the Inuvik Regional Hospital's Rehabilitation Department; Dolores Harvey, the Elders Coordinator for the town's local friendship centre, Ingamo Hall; and Shannon O'Hara, an Inuit Research Advisor for the Inuvialuit Regional Corporation. These advisory board members provided me with a better understanding of their community and ensured that my research and the methods I used were the most appropriate for Inuvialuit Elders, thus emphasizing a bottom-up approach with a focus on locally defined priorities and perspectives.

While there were many benefits to establishing an advisory board for this research, I also encountered some challenges while working with locally appointed advisory members from the community. The most significant challenge I experienced was arranging and organizing meetings with members, as they are talented and busy individuals with many other commitments. At times, this made it difficult to update advisory board members on the progress of my project and seek guidance for participant recruitment; however, by collectively agreeing that I would send weekly update emails (i.e., it was not possible to select a time and day for everyone to be in attendance for a in-person meeting), these issues were quickly eradicated. Despite this challenge, I believe the locally appointed advisory board provided useful and informed advice, thus making my research more appropriate and ultimately successful.

The advisory board agreed that using a case study methodology to examine the social determinants of health that influence the likelihood of Inuvialuit Elders falls was most appropriate for my research. In the following methodology section, I will first provide an overview of the methodology and the various types of case studies available to qualitative researchers. Then I will explain and justify the particular type of case study I used for my research. Finally, I will describe the strengths and weaknesses of using a case study methodology.

Overview of case studies. For scholars conducting qualitative research, a case study research methodology is worth consideration. Using it as a research design, scholars focus on an individual case, or a select few cases, while finding exclusive details pertaining to each case (Scott, 2014; Stake, 2005). Case studies also permit researchers to address common and uncommon phenomena in a social world, describe and evaluate prior research studies, test previously postulated hypotheses, and meticulously analyze natural experiments (Scott, 2014). This methodology also encourages researchers to refine theories, challenge generalizability, and learn more about participants' cultural and social perceptions of phenomena (Stake, 2005). Nevertheless, it has been argued that case studies cannot be used to easily represent the entirety of a social world (Stake, 2005); however, this argument misses the intention of case studies altogether. The idea behind case studies is not to represent a social world as a whole, but to instead represent the entirety of the case (Stake, 2005). Therefore, case studies enable researchers to share evidence through the application of theory, observations, and comprehensive analyses, as well as develop a holistic understanding of the interactions experienced by research participants (Stake, 2005).

To further comprehend the main tenets of this methodology, it is also important to understand the different articulations, or "strands", of case studies. Stake (2005) argued that there are three strands of case studies: Intrinsic, instrumental, and collective. Whereas individual case studies are used to further researchers' knowledge on personally intriguing topics, instrumental case studies are used to advance the understanding of an issue outside of internal interest (Stake, 2005). Finally, collective case studies are similar to instrumental case studies; however, in this articulation of case studies, while investigating phenomena and general conditions experienced by specific populations, researchers tend to use a number of cases instead of just one (Stake, 2005).

Yin (1994) also argued that case studies consist of three stands, but referred to them as descriptive, explanatory, and exploratory. First, descriptive case studies encourage researchers to develop a descriptive theory so that they can study uncommon phenomena, populations, and events (Yin, 1994). Second, explanatory case studies permit researchers to highlight commonalities between single and/or multiple cases (Yin, 1994). In other words, researchers can use this strand of case studies to determine if the findings from one case can be applied to others (Yin, 1994). Finally, exploratory case studies allow scholars to study uncommon research topics in order to gain a better understanding of a specific case or similar cases (Yin, 1994).

Using a case study for my research. For my research, I employed an exploratory case study methodology, as outlined by Yin (1994). Exploratory case study research is typically used when there is a lack of earlier studies on a particular topic. As such, an exploratory case study can be used to further investigate a specific case or similar cases that are characterized by a lack of detailed preliminary research. For my research, the case was the social determinants of health that contribute to Inuvialuit Elders' falls risk and rates. Thus, due to the strengths of using a case

study, which I will outline below, I believe that an exploratory case study was the most appropriate methodology for my research.

Of its many benefits, using an exploratory case study assisted me in examining and understanding a case in injury prevention of which very little research has been conducted (i.e., Inuvialuit Elders' experiences with falls and their falls prevention) (Yin, 1994). Second, this methodology aligns with my constructionist epistemology. Using an exploratory case study provided me with the opportunity to understand the values and social systems created (or constructed) among the Inuvialuit, LFPPs, and myself (Crotty, 1998). Third, as it is a methodology that encourages researchers to use various research methods (e.g., participant observation and interviews), it also encouraged me to strengthen my capacity for collecting multiple forms of data (Yin, 1994). Fourth, given the time constraints of completing a two-year Master's thesis, a case study was more appropriate to use than ethnography because it still allowed me to gain rich, in depth data without having to be in the field for long periods of time. Lastly, this methodology allowed me to provide a rich, detailed explanation of the case (i.e., which, if any, social determinants of health increase the likelihood of Inuvialuit Elders in Inuvik, NWT experiencing a fall).

Although exploratory case studies provide qualitative researchers with a number of advantages, there are also disadvantages to using this methodology. As mentioned in the prior section, it has been argued that researchers cannot generalize results by utilizing case studies (Yin, 1994); however, this argument goes against the general premise of this methodology. Researchers are expected to conduct an exploratory case study to help understand phenomena affecting particular populations, not to generalize the results from various cases (Yin, 1994). Another critique mentioned in the literature is the possibility of researchers misinterpreting and

producing incorrect results and conclusions from the information provided by participants (Yin, 1994). This criticism has been refuted by the fact that researchers using exploratory case studies do not intentionally change data provided by participants to prove a point, but instead attempt to "stay true" to the given information (Yin, 1994).

After considering the weaknesses of an exploratory case study methodology, I argue that it is the strengths of this research design that made it the most appropriate one to use for my research. Based on the strengths of an exploratory case study methodology, I was able to co-identify (with the research participants and the locally-appointed advisory board) the social determinants of health that affect the likelihood of Inuvialuit Elders experiencing a fall.

Paper Two

To determine which current falls prevention strategies are recommended for reducing Inuvialuit Elders fall rates, as well as understand how falls prevention programs can be co-created to be culturally safe for Inuvialuit Elders, I employed participatory action research (PAR) (Baum, MacDougall, & Smith, 2006; Getty, 2010; Reason, 1998; Walter, 1993). The local research advisory board agreed that this approach would be appropriate for this study as well. In this section, I provide an overview of a PAR methodology. Below, I describe how I used a participatory action research approach and why it was beneficial for my research. Finally, I discuss the strengths and weaknesses associated with participatory action research methodologies.

Overview of PAR. As a research design, it has been suggested that PAR has two main objectives:

> One aim is to produce knowledge and action directly useful to a group of people through research, adult education or sociopolitical action. The second aim is to empower people

> at a second and deeper level through the process of constructing and using their own knowledge… (Reason, 1998, p. 71)

PAR is thus used by researchers to ensure that the findings and solutions developed in collaboration with the participants evolves into some form of action component that may then produce positive change for their community or group (Walter, 1993). Further, by paying attention to the power relationships present in research, as well as advocating for participants to exercise their power throughout the research process, PAR researchers also ensure that the research conducted is respectful of the participants and is done in their community's best interest (Baum et al., 2006; Getty, 2010). Based on these tenets, PAR provided me with the most adequate and comprehensive approach for addressing my second paper's research objectives.

Strengths and weaknesses. Like any methodological framework, there are both strengths and weaknesses to PAR. One benefit of using a PAR methodology is that it has researchers work in collaboration with participants and their community (Walter, 1993). Rather than just participating in the research, PAR methodologies require that researchers ensure that these individuals have an active role throughout the research process (Baum et al., 2006; Walter, 1993). PAR methodologies can also provide researchers "access to community understanding, knowledge and collective memory" (Walter, 1993, p. 6), meaning that researchers having access to participants' viewpoints and interpretations of the data can provide their studies and related bodies of knowledge with unique, novel information (Getty, 2010). Lastly, a PAR methodology ensures that the data collection, the analysis process, and the study in its entirety reflect the experiences and understandings of the participants rather than researchers' perceptions of their reality; therefore empowering the participants and ensuring that the research provides the

participants and their community with practical outcomes and positive change (Baum et al., 2006; Getty, 2010; Walter, 1993).

While there are many benefits to using a PAR design, there are also some weaknesses of which researchers need to be aware. A disadvantage to using PAR methodologies is that there is no "research leader" (Walter, 1993). Researchers such as Walter (1993) have refuted this by suggesting that PAR promotes "[t]he diffusion, or even relocation, of power from the researcher to the community of interest" (p. 2). Instead of striving to own or to direct the study, a researcher conducts PAR to become partners with the participants and to advocate for them to be actively involved in the research process (Baum et al., 2006; Walter, 1993). Another critique mentioned in the literature regarding PAR is that it may be impractical. As suggested by Walter (1993), "categorising a group with a shared interest or problem as a 'community' does not automatically result in a consensus on what the problem is and how it might best be addressed" (p. 7). However, the issue with this criticism is that a researcher does not conduct PAR to generalize the identified problems and developed solutions of a sample to a population (or, in this case, a community); rather this methodology provides a snapshot of the issue through the perspectives and opinions of those who were willing to participate.

Despite the criticisms of PAR methodologies, I still believe that this research design was the most appropriate to use for my study. As a result of the strengths of this methodology, I argue that I was able to co-identify (with the research participants and the local advisory board) the ways in which falls prevention programs can be culturally safe for Inuvialuit Elders in Inuvik, NWT.

Methods

Before I discuss the different methods and analyses that I used, it is important to address sampling and how I identified participants for my research. Following this, I describe the methods and analyses that I used for paper one and paper two; all of which the local advisory board deemed appropriate for this research.

Sampling

I used different recruitment strategies for identifying potential participants, who fell into two categories: Inuvialuit Elders and LFPPs. For the elderly Inuvialuit participants, the inclusion criterion was that they could participate in the research if they fell within the established Aboriginal senior age category of fifty-five years old and older (Wilson, Rosenberg, Abonyi, & Lovelace, 2010). This criterion was included because older adults are at greater risk of falling in comparison to the rest of the population and I only wanted to include individuals who were at higher risk of experiencing falls. Further, due to the shortened life expectancy of Inuit peoples (Health Canada, 2016; Wilson et al., 2010), it was necessary to have an appropriate cut-off for "younger-older" participants. I also employed the use of snowball sampling (i.e., a recruitment strategy that has participants suggest future participants from among their acquaintances) (Cohen & Arieli, 2011) to identify Inuvialuit Elder participants as well.

For the LFPPs, I recruited these individuals through the use judgement sampling (Marshall, 1996). According to Marshall (1996), judgement sampling is when researchers select participants based on specific criteria because it is believed that these individuals will provide information that will assist in answering their research questions. My specific criteria were that LFPP participants were knowledgeable in falls prevention literature and had training in falls prevention and/or certificates (e.g., Canadian Falls Prevention Curriculum). I also specified that

LFPP participants had to have worked in falls prevention for at least one year to ensure that they were familiar with the area.

I engaged in a number of recruitment strategies: I contacted LFPPs who fit the recruitment criteria through email and phone calls; sent recruitment posters to community organizations in Inuvik (e.g., Inuvik Community Corporation, Inuvialuit Regional Corporation); and I volunteered at local community services tailored for Inuvik's senior and elderly residents (i.e., the Inuvik Regional Hospital's Elders' Day Program and the local friendship centre, Ingamo Hall's, luncheons). When participants expressed interest in participating, I either sent them the study information over email or explained the study over the phone/in person. If they agreed to participate, I arranged to meet with them in person at various locations (e.g., their homes, their place of work, etc.), where I would then explain and have them sign the participant consent form. I interviewed a total of 14 participants: 8 Inuvialuit Elders (4 males and 4 females, with ages ranging from 64 to 79 years old) and 6 LFPPs (1 male and 5 females; the male participant self-identified as Pilipino-Canadian and the female participants self-identified as Euro-Canadian). LFPP participants included occupational therapists (2), long-term care workers (1), senior program coordinators (1), rehabilitation assistants (1), and community health representatives (1).

To understand the determinants that affect the likelihood of Inuvialuit Elders experiencing a fall (Paper 1), I used two exploratory qualitative research methods: participant observation (Dewalt & Dewalt, 2002) and semi-structured interviews (Ayres, 2008; Barriball & While, 1994; Fontana & Frey, 2005). To co-determine what strategies should be considered and used to develop and implement culturally safe falls prevention programs for Inuvialuit Elders in Inuvik (Paper 2), I used semi-structured interviews.

Participant Observation

Participant observation is used to better understand individuals, communities, and/or populations (Dewalt & Dewalt, 2002). It also is a method often used to assist researchers inspect any phenomena affecting the participants of interest (Kawulich, 2005). Lastly, participant observation encourages researchers to become familiar with their participants (e.g., by joining a group or by living in participants' communities), which permits scholars to establish the trust and rapport needed to gain an intimate familiarity with participants' daily activities, rituals, interactions and events as a means of understanding their culture and social world (Dewalt & Dewalt, 2002; Scott, 2014).

There are various components in participant observation; however, past literature has indicated that researchers utilizing this method should include some of the following elements:

> (1) Living in the context for an extended period of time; learning and using local language and dialect; (2) actively participating in a wide range of daily, routine, and extraordinary activities with people who are full participants in that context; (3) using everyday conversation as an interview technique; (4) informally observing during leisure activities (hanging out); (5) recording observations in field notes (usually organized chronologically); and (6) using both tacit and explicit information in analysis and writing. (Dewalt & Dewalt, 2002, p. 5)

Considering these components, scholars have indicated that participant observation is thus a research method that allows researchers to observe participants in an attempt to better understand their fundamental processes of social life, which provides researchers context for sampling, the construction of their interview guides, etc. (Dewalt & Dewalt, 2002).

Although it is evident that participant observation supports qualitative research, critics have expressed the disadvantages of this research method as well. First, it has been argued that participant observation makes it difficult for researchers to accurately represent individuals' perspectives without imposing their own personal biases (Dewalt & Dewalt, 2002). Second, critics have expressed their concerns towards scholars at risk of being in a state of "research limbo" (Scott, 2014). This means that researchers will either become so detached that the insights developed from participant observation will prove to be disadvantageous, or they become so attached that their involvement will render the researcher's data questionable (Scott, 2014). However, I argue that as long as researchers are reflexive about their backgrounds and biases, they will be able to achieve some semblance of balance while conducting their study.

After considering the weaknesses of participant observation, I argue that the strengths of this method enabled me to collect significant data. For my research, I used a combination of Dewalt and Dewalt's (2002) first, second and fifth recommended elements; that is, I lived in the community, volunteered for and observed services that are offered regularly to Inuvik's seniors and Elders (i.e., Inuvik Regional Hospital's Elders' Day Program and Ingamo Hall's luncheons), and then recorded my observations in a journal. By using these participant observation components, this research method gave me the opportunity to gain stronger insight into Inuvialuit Elders' understanding of falls and their prevention in these public settings. Moreover, participant observation also permitted me to establish a trusting relationship with the participants and learn more about their community and culture whilst collecting data for my research.

Semi-Structured Interviews

Another commonly used method in qualitative research is interviews. As a key data collection tool, interviews are particularly beneficial because they permit both researchers and

participants to actively and mutually participate in a dialogue relevant to addressing the research questions and topics (Fontana & Frey, 2005). However, before scholars can obtain these benefits, they first need to determine which type of interview will be best for obtaining this data. Generally, it is known that interviews fall into three main categories: structured, semi-structured, and unstructured (Fontana & Frey, 2005). For my research, I used semi-structured interviews. Semi-structured interviews are interviews guided by pre-determined topics and open-ended questions that elicit discussions on the various influences present in participants' everyday lives (Ayres, 2008; Fontana & Frey, 2005). These interviews further enable researchers to build rapport through the use of active listening skills, and provide participants more opportunities to develop, elaborate, and share their opinions regarding the research; making these integral components of semi-structured interviews because it provides researchers with the opportunity to collect rich data concerning these individuals' experiences (Ayres, 2008; Fontana & Frey, 2005). Nonetheless, the validity or credibility of semi-structured interviews has been criticized because they cannot guarantee good quality responses from participants; however, I argue that if the researcher maintains a respectful attitude towards his/her informants and records the shared data in great detail, the reliability and trustworthiness of the research findings will be evident and improved (Barriball & While, 1994).

I conducted twelve semi-structured interviews (6 with LFPPs and 6 with Inuvialuit Elders) in Inuvik, NWT, all of which were done in locations of the participants' choosing. The duration of the interviews was twenty to eighty minutes, and all of the sessions were digitally recorded with permission from the participants. All interview transcripts were returned to the participants by mail or email for participant feedback; however, only one participant edited her transcript. Using semi-structured interviews therefore gave me opportunity to collect ample

amounts of data and helped me learn more about the SDH that influence Inuvialuit Elders' health and well-being, and the elements that comprise a culturally safe falls prevention program for Inuvialuit Elders.

Analysis

To analyze the data I collected from these methods, I used thematic analysis supported by Nvivo11™ software. Thematic analysis is used to reveal and report recurrent patterns in the data (Braun & Clarke, 2006). Braun and Clarke (2006) described a six-step approach to thematic analysis. The first step requires researchers to familiarize themselves with the content of their data and take note of initial ideas. Second, researchers need to identify initial codes within their data, and then attach their codes to the text in order to organize their data. Third, the researchers' codes should be collated into potential themes. Fourth, the themes should be reviewed and refined to ensure that they suite the initial context and generated themes of the research. Fifth, the researchers need to precisely define and name their themes to ensure that they reflect the message that the analysis is attempting to deliver. Lastly, in the sixth step, the researchers need to establish clear final themes that will relate to the research questions and the literature reviewed. Through thematic analysis, I was able to determine the determinants that effect Inuvialuit Elders' likelihood of experiencing a fall (Paper 1), and to understand the strategies needed to make falls prevention programs in Inuvik more culturally safe (Paper 2).

Thesis Format

This thesis is written using the publishable paper format. Paper one will address my first research objective: To determine which social determinants of health SDH do stakeholders (i.e., LFPPs and Inuit Elders) believe most affect the likelihood of Inuvialuit Elders' falls. Paper two will address my second research objective: To understand what the current falls prevention

recommendations (from research participants) to decrease fall rates among Inuvialuit Elders are, and to determine how falls prevention programs for Inuvialuit Elders can be co-created (with research participants) to be culturally safe. Through these two papers, I hope that my research will make a strong contribution to understanding the gaps in current literature regarding Inuvialuit Elders and falls prevention, as well as the ways in which falls prevention programs be made to be culturally safe for Inuvialuit Elders in Inuvik, NWT. Finally, I hope that my findings can be used to improve the health of northern Aboriginal Elders and further efforts towards culturally safe programs.

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Chapter 2: Understanding Fall Risk Factors for Inuvialuit Elders in Inuvik, Northwest Territories, Canada

Abstract

Aboriginal Elders in Canada experience disproportionately poorer health measures in comparison to non-Aboriginal seniors. Current falls prevention literature suggests that Aboriginal Elders have higher rates of falls and fall-related injuries (Reading et al., 2011); however, information regarding Inuit Elders experiences with falling is non-existent. Using the social determinants of health (SDH) as a conceptual framework, this research sought to understand which SDH stakeholders (i.e., LFPPs and Inuit Elders) believe most affect the likelihood of Inuvialuit Elders' falls. The findings from the twelve semi-structured interviews and participant observations show that personal health status and conditions, personal health practices and coping skills, physical environments, social support networks, and access to health services increase Inuvialuit Elders' likelihood of experiencing a fall. There are, however, determinants that also decrease their likelihood of experiencing falls (health practices and coping skills, and access to health services), as well as determinants that have no influence on falls (culture). In light of these findings, recommendations are offered for LFPPs in Inuvik to implement falls prevention programs that adequately address the SDH that influence Inuvialuit Elders' fall risk and rates.

The Canadian falls prevention literature has shown that prevention programs and interventions can reduce falls among the elderly (Beauvais & Beauvais, 2014; Gillespie et al., 2012); however, not all groups of elderly people are equally vulnerable to injury. Studies have shown that Aboriginal peoples (i.e., First Nations, Métis, and Inuit) in Canada experience injuries at higher rates than non-Aboriginal Canadians (Bjerregaard, Young, Dewailly, & Ebbson, 2004; Health Canada, 2002). Yet, there continues to be little known about Aboriginal Elders' rates of falls (Hill, Pinto, Nathens, & Fowler, 2014), and this is especially the case for Inuit Elders, where existing data only provides a generalized overview of their injury rates (i.e., there is limited information pertaining to fall-related injuries among the Inuit) (Bjerregaard et al., 2004; Health Canada, 2001).

In an attempt to address this gap in the research, I conducted research in Inuvik, Northwest Territories (NWT) (68°21'N, 133°43'W), a community 1086km northwest of Yellowknife and located on the Mackenzie River Delta (NWT Bureau of Statistics, 2016a). According to its most recent census, Inuvik has a population of 3,170, of which 2,059 individuals self-identify as Aboriginal (NWT Bureau of Statistics, 2016b). The Aboriginal populations in the community primarily consist of Inuvialuit (Inuit), Gwich'in (First Nations), and Métis peoples. Although more recent statistical demographic profiles of these groups are unavailable, Statistics Canada (2007) cited these groups as representing 38.9% (Inuvialuit), 18.4% (Gwich'in), and 4.7% (Métis) of Inuvik's population. The NWT Bureau of Statistics (2016b) also identified that Inuvik has an elderly population (i.e., individuals 60 years old and older) of 359 people (no breakdown by ethnicity is available). Aboriginal Elders and non-Aboriginal seniors thus comprise approximately 11.3% of Inuvik residents (NWT Bureau of Statistics, 2016b).

Despite Inuvik's relatively small elderly population, this demographic is expected to grow. According to Statistics Canada (2015a), it is estimated that one in four Canadians will be over the age of 65 by 2051, which will position the senior population – Inuvialuit Elders included – as one of the most dominant demographics in the country (Health Canada, 2002). The prevalence of injuries in seniors, specifically fall-related injuries, is also anticipated to increase (Hill et al., 2014; Peel, Kassulke, & McClure, 2002). The notable information gap of fall-related injuries and fatalities among Inuit Elders in Canada spurred me to conduct research with Inuvialuit Elders and local fall prevention programmers (LFPPs) in Inuvik. The participants and I worked together to better understand the following question: "Which social determinants of health (SDHs) do stakeholders (i.e., LFPPs and Inuit Elders) believe most affect the likelihood of Inuvialuit Elders' falls?"

Using the SDHs (World Health Organization, 2017) as a conceptual framework, and thematic analysis (Braun & Clarke, 2006) to analyze the data from my 12 semi-structured interviews with LFPP and Inuvialuit Elders and participant observation notes, I identified (a) the SDH that participants believed increase the likelihood of falls (personal health status and conditions, personal health practices and coping skills, physical environments, social support networks, and access to health services); (b) the SDH that participants believed decrease the likelihood of falls (health practices and coping skills, and access to health services); and (c) the SDH that participants believed have no influence on falls (culture). The results from this study challenge current fall prevention practices, and therefore indicate that falls prevention researchers and practitioners should carefully consider these determinants and their broader implications when developing falls prevention programs and interventions for Inuvialuit Elders.

Literature Review

To examine the relationship between the SDH and the likelihood of Inuvialuit Elders' falls, I situated my research within three areas of the literature: Aboriginal health, the prevalence of fall-related injuries and fatalities among Aboriginal peoples in Canada, and the SDH.

Aboriginal Peoples' Health

In comparison to non-Aboriginal populations, Aboriginal populations experience tremendous physical health inequalities. For example, they experience higher rates of chronic diseases (e.g., diabetes, heart disease), infectious diseases (e.g., tuberculosis), physical inactivity, and mental health issues (e.g., suicide, drug abuse, and addiction) than non-Aboriginal peoples (Health Canada, 2012; Somogyi, Barker, MacLean, & Grischkan, 2015). As a result of these high rates, health disparities experienced by Aboriginal peoples have been the focus of a great deal of research. However, information related to Inuit Elders' health remains limited.

Research has shown that Inuit peoples experience some of the highest mortality rates and largest health disparities in Canada (Health Council of Canada, 2005; Statistics Canada, 2012b). Yet, research conducted with Inuit Elders in relation to health disparities has predominantly focused on

> methodological barriers [(i.e., remote living conditions and access to healthcare]; acculturation and cultural adaptation; poverty [(i.e., inadequate living conditions or homelessness)]; addiction; mental health issues and suicide; trends in physical health including chronic disease prevalence; nutrition and food security; evidence of successful aging in spite of these issues; and challenges of providing formal and informal care services to rural [and remote] elderly. (Somogyi et al., 2015, p. 487)

While studies in these areas provide researchers with a better understanding of the health disparities and challenges Inuit Elders face, it is evident that information regarding their experiences of injury, specifically fall-related injuries, is lacking.

Despite this limitation, evidence strongly suggests that Inuit peoples are among the most susceptible to suffering from serious health problems as a result of intentional (i.e., interpersonal or self-inflicted, such as homicide, family violence, or assault) and/or unintentional (i.e., accidental, such as motor vehicle accidents, drowning, accidental poisoning, or accidental falls) injuries (Bjerregaard et al., 2004). There is scant research that describes the direct and indirect influence of SDH on Inuit peoples' susceptibility to injury. There is also little recognition of the influence the distal SDH, such as colonialism and culture, have on Inuit peoples' injury rates. As a result, potential health disparities (e.g., fall rates) affecting Inuit populations remain poorly understood (Somogyi et al., 2015).

Aboriginal Peoples and Falls

Due to the increasing global rate of fall-related injuries and fatalities among senior populations (Hill et al., 2014; Naraynsingh et al., 2015; Stewart-Williams et al., 2.015), it is not surprising that fall rates among Canadian seniors have been increasing as well. In recent years, researchers have found that almost half of Canadian seniors who fall will experience an injury. Of these individuals, 5-25% will sustain injuries that will be considered "serious injuries" (e.g., fracture, sprain, etc.) (Herman, Gallagher, & Scott, 2006). Moreover, falls have been found to account for upwards of 85% of all injuries that result in hospitalization in Canada among those aged 65 years old and older (Scott, Wagar, & Elliott, 2011). Thus, it is evident that falls prevention programs are needed to not only reduce Canadian seniors' likelihood of experiencing injury post-fall, but also to prevent falls altogether.

Although there has been a drastic increase in literature on fall rates, fall-related injuries and fatalities, and falls prevention for seniors in Canada (Markle-Reid et al., 2015), little is known about the experiences of Aboriginal Elders in Canada with regard to falling. There are also few firsthand accounts of Aboriginal Elders' engagement with falls prevention programs in the literature. Researchers and practitioners have also failed to consistently document fall rates among Aboriginal Elders, which has made it difficult to understand the scope and nature of falls amongst this population. The only Canadian falls prevention study with a focus on First Nations Elder found that fall-related injuries and fatalities are anticipated to rise due to the expected growth of the Aboriginal elderly population in Canada (Reading et al., 2011). Reading et al. (2011) also reported that Aboriginal Elders throughout Canada were twice as likely to be hospitalized as a result of falling in comparison to their non-Aboriginal counterparts, which further highlights a specific need for Aboriginal-focused falls prevention interventions and programs.

Even with the important insights provided by Reading et al. (2011), key information concerning Aboriginal Elders in Canada remains absent within the literature. For both Métis and Inuit populations in particular, published research regarding their fall rates and preventative programs is non-existent. Moreover, the factors that either directly or indirectly influence older Métis and Inuit adults' likelihood of experiencing a fall continues to be unknown.

Social Determinants of Health

According to the WHO (2017), the SDH are defined as "the conditions in which people are born, grow, live, work and age" (para. 1). These conditions include physical, mental, social, and contextual factors that may positively or negatively influence individuals' overall health and well-being (Davidson, 2014; WHO, 2017). Moreover, while the SDH have been articulated in

many ways by various public health organizations, the Public Health Agency of Canada (2011) identified the following as determinants of health for Canadians: “income and social status; social support networks; education and literacy; employment and working conditions; social environments; physical environments; personal health practices and coping skills; healthy child development; biology and genetic endowment; health services; gender; and culture” (Key determinants section, para. 1). It is important for researchers and practitioners to acknowledge the affect that these determinants have on people’s health – and in this case, the influence they have on the likelihood of seniors experiencing falls and fall-related injuries – rather than focusing exclusively on individual biomedical factors (Davidson, 2014). There is currently limited information pertaining to the influence of the SDHs on Canadian seniors’ fall rates.

There is a need for research to more fully understand the proximal and distal SDH that influence falls. However, it is important to note that there have been few studies on the determinants of health that are relevant to non-Eurocanadian populations within Canada (e.g., Aboriginal peoples, immigrants, etc.). While the SDH for non-Aboriginal Canadians have been the focus of research since the early 1970s (Davidson, 2014), information pertaining to Inuit people’s determinants of health was not readily available until the late 2000s. Richmond’s (2009) study provided retrospective insights into the determinants that have played a significant role in Inuit people’s health and well-being. Her research highlighted the significant health disparities experienced by Inuit in Canada in comparison to non-Aboriginal Canadians. Whereas the average non-Aboriginal Canadian was found to possess and/or have access to the majority of the determinants of health outlined by the Public Health Agency of Canada (2011), Richmond (2009) identified that Inuit have lower incomes and fewer educational opportunities, live in

impoverished communities and homes, experience extremely high rates of mental health issues, and have limited access to health services.

In addition to uncovering the discrepancies Inuit peoples experience regarding the determinants of health that are commonly outlined by the Public Health Agency of Canada (2011), Richmond (2009) also established a list of determinants she felt were relevant for assessing Inuit peoples' overall health and well-being. This list included the following SDH: social support, gender, age, geographic region, marital status, Aboriginal language ability, and participation in traditional harvesting activities. Among these SDH, Richmond (2009) found social support to be one of the most important determinants of health for Inuit peoples. For example, one of her most prominent findings was that the majority of Inuit people would much rather live "in rural settings and/or [be] close to family and social support networks" (Richmond, 2009, p. 475) than live in an urban Canadian city and have a higher income.

Although it is evident that Inuit do not have access to the same determinants of health as non-Aboriginal populations, it is clear that some determinants of health are more important to Inuit peoples than others. Thus, returning to falls prevention, researchers need to look beyond individual biomedical factors that contribute to falls prevention to develop a better understanding of which determinants of health are the most relevant for Inuit Elders, which is what I endeavoured to do through the research described below.

Methodology and Methods

For this research, I conducted an exploratory case study (Yin, 1994) that utilized a participatory research approach (Maguire, 1987). A participatory approach to research is a "process of social investigation, education, and action" (Maguire, 1987, p. 3) that enables researchers to co-identify (with community members) and address important issues; promote

community participation and provide residents with a genuine voice in the research; and bridge gaps in knowledge and practice between researchers and communities (Wallerstein & Duran, 2010; Maguire, 1987). To apply these tenets to my research, I established a local advisory board that was comprised of three stakeholders who live in Inuvik: Crystal McPhail, a Regional Occupational Therapist for the Inuvik Regional Hospital's Rehabilitation Department; Dolores Harvey, the Elders Coordinator for the town's local friendship centre, Ingamo Hall; and Shannon O'Hara, an Inuit Research Advisor for the Inuvialuit Regional Corporation (all names are used with permission). The advisory board members provided me with guidance to ensure that my research and the methods I used were the most appropriate for Inuvialuit Elders, to recruit participants, and to better understand the inner-workings of their community. The advisory board supported the use of an exploratory case study for this research. An exploratory case study permits researchers to study uncommon research topics in order to gain a better understanding of a specific case or similar cases (Yin, 1994). Approval for this project was granted by the Research Ethics Board at the University of Ottawa and the Aurora Research Institute (which is responsible for issuing research licences for the NWT on behalf of the Government of the NWT). I, a Euro-Canadian graduate student, who grew up in Beeton, ON (a town 88km northwest of Toronto), lived and conducted in Inuvik from September 19th, 2016 to November 30th, 2016.

I used different recruitment strategies for identifying potential participants, who fell into two categories: Inuvialuit Elders and LPFFs. For Elder Inuvialuit participants, the inclusion criterion for participation was being age 55 or older, the age at which researchers have considered Aboriginal peoples in Canada to be seniors. Due to the shortened life expectancy of Inuit [i.e., it is expected for the average Canadian male and female to live upwards of 79 years and 83 years respectively, whereas Inuit male and female life expectancies are only 64 years old

and 73 years old respectively (Statistics Canada, 2015b; Wilson et al., 2010)], I followed other scholars who have identified Inuit Elders as being 55 years of age and older (see Collings, 2001; Wilson, Rosenberg, Abonyi, & Lovelace, 2010). I also selected this age criterion because older adults are at a greater risk of falling in comparison to the rest of the population (Beauvais & Beauvais, 2014; Canadian Patient Safety Institute, 2017; Hill et al., 2014; Parachute, 2015; Scott, 2012a; Stewart et al., 2015). To identify Inuvialuit Elder participants, I employed snowball sampling (Cohen & Arieli, 2011). In total, I recruited 8 Inuvialuit Elders (4 males and 4 females, with ages ranging from 64 to 79 years old).

I used judgement sampling to recruit LFPP participants (Marshall, 1996). According to Marshall (1996), judgement sampling occurs when researchers select participants based on specific criteria because it is believed these individuals will provide information that will answer the research questions. Thus, my specific criteria for inclusion was that LFPP participants were knowledgeable about falls prevention and had training in falls prevention (e.g., Canadian Falls Prevention Curriculum). In addition, I specified that LFPP study participants had to have worked in falls prevention for at least one year to ensure that they were familiar with the area. I recruited 6 LFPP participants (1 male and 5 females; the male participant self-identified as Filipino-Canadian and the female participants self-identified as Euro-Canadian). LFPP participants included occupational therapists (2), long-term care workers (1), a senior program coordinator (1), a rehabilitation assistant (1), and a community health representative (1).

The advisory board members agreed that participant observation (Dewalt & Dewalt, 2002) and semi-structured interviews (Fontana & Frey, 2005) would be appropriate research methods. To that end, I volunteered with local Elders at the Inuvik Regional Hospital's Elders' Day Program and at the local Friendship Centre (i.e., a non-profit community centre and

Aboriginal program/service delivery organization), Ingamo Hall. Whereas the Elders' Day Program provides daily (Monday to Friday, from 10AM to 3PM) activities and games for a select number of seniors in Inuvik (i.e., acceptance into the program is dependent on availability of space and their ability to cater to individuals' needs), Ingamo Hall runs various educational, recreational, social, and multicultural activities and events for all of the town's citizens, including Elders' luncheons, which I attended.

I volunteered with and observed elderly participants at the Elders' Day Program every Monday and Thursday for six weeks, whereas I only volunteered (and observed) at Ingamo Hall five times. Volunteer opportunities and observations were limited at Ingamo Hall because I only volunteered on the days of its Elder luncheons, which occurred every other Thursday. Participant observation enabled me to observe the services offered to Elders in Inuvik. By observing Inuvialuit Elder participants' daily activities, interactions, and events, I not only gained familiarity with their culture and social world (Dewalt & Dewalt, 2002), but I also had the opportunity to gain stronger insight into Inuvialuit Elders' understanding of falls and their prevention in these public settings.

I conducted semi-structured interviews to identify factors related to the SDH that participants believed to either increase or decrease the likelihood of an Inuvialuit Elder experiencing a fall. Semi-structured interviews are interviews guided by pre-determined topics and open-ended questions that elicit discussions on the various influences present in participants' everyday lives (Fontana & Frey, 2005). Both the advisory board and I agreed that this type of interview was most appropriate for my research because it would provide the participants with more opportunities to develop, elaborate, and share their opinions (Fontana & Frey, 2005), as well as enable me to prompt discussion, build rapport, and gather pertinent information in a

respectful manner (Ayres, 2008; Barriball & While, 1994). I thus facilitated 12 semi-structured interviews (10 one-on-one interviews and two two-on-one interviews), for a total of 14 participants (6 LFPPs and 8 Inuvialuit Elders). I digitally recorded and transcribed all interviews verbatim. I returned the interview transcripts to the participants by mail or email for participant feedback; however, only one participant edited her transcript. To recognize the expert contributions and knowledge of the Inuvialuit Elders (Giles & Castleden, 2008), the participants' names appear with permission.

Analysis

To analyze the data set, I used Braun and Clarke's (2006) six-step thematic analysis framework. This process was supported by Nvivo11^{TM}, which enabled me to organize the interview transcripts and observation notes. As stipulated by Braun and Clarke (2006), my first step was to familiarize myself with the transcripts and my observation notes, and to record any ideas I had for potential themes to be used later in the analysis. Second, I identified initial codes within my data and then attached these codes to my transcripts and my notes as way to organize the data. During this process, I initially based my codes on Richmond's (2009) list of Inuit SDHs; however, I found this approach to be limiting. Of her suggested determinants, I was only able to establish links to geographic region and social support, which left a significant portion of my data untouched. I therefore decided to include initial codes that were also based off of the Public Health Agency of Canada's (2011) list of determinants of health, such as physical environments, access to health services, and culture. This approach enabled me to progress to the third phase of my analysis: sorting my codes into potential themes. Fourth, I reviewed and refined my themes to ensure that they suited the initial context of my research. The fifth step was comprised of two stages: I travelled back to Inuvik from April 1st, 2017 to April 9th, 2017 to

review the potential themes with the participants; and I then precisely named and defined the themes so that they reflected the broader themes within my data. For the final step, I established three themes: the SDH that participants believe increase likelihood of falls, decrease likelihood of falls, and that have no influence on falls.

Results

Based on my analysis and supported by feedback from my participants, I identified three main themes, which I explore below.

SDHs that Increase Likelihood of Falls

Personal health status and conditions. Participants (4 female LFPPs, 1 male Inuvialuit Elder, and 2 female Inuvialuit Elders) agreed that pre-existing and chronic health conditions increase the likelihood of an Inuvialuit Elder experiencing a fall. The examples provided by these participants were predominantly related to physical health conditions (e.g., changes to physical function, vision and auditory changes, poor balance and stability, general weaknesses and frailty, etc.); however, cognitive health conditions were also identified as fall-risk contributors. One LFPP, Chelsey, elaborated on how cognitive illnesses and impairments have the potential to catalyze individuals' physical health conditions, and ultimately increase Elders' likelihood of experiencing fall-related injuries:

> Dementia, and any type of cognitive changes where there is impulsivity or lack of insight into some physical function, like into their own—or memory changes. So, if they have poor physical function, and…they can't remember that they have poor physical function…and then they'll get up and fall.

At both the Elders' Day Program and Ingamo Hall, I observed events that also support these findings. In fact, it was common practice for LFPPs to assist some of the attending

Inuvialuit Elders maneuver within these facilities due to their physical health conditions and/or cognitive impairments.

Personal health practices and coping skills. Of the many health practices and coping skills that were identified as factors that increase the likelihood of an Inuvialuit Elder experiencing a fall, the most commonly cited one (by 1 male LFPP, 4 female LFPPs, 3 male Inuvialuit Elders, and 1 female Inuvialuit Elder) was the use of improper footwear. Predominantly LFPP participants indicated that traditional footwear (e.g., kamiks, mukluks, etc.) increased the likelihood of Inuvialuit Elders experiencing a fall. As one LFPP, Crystal M, stated, "I think one is footwear…And it's usually like super worn down mukluks that are like glass, you know? Just because the moosehide [caribou, rabbit, muskrat, beaver, wolf, or seal skin] gets really slick." Chelsey also agreed and noted, "Their footwear sometimes [gets] slick—like their kamiks."

Similarly, LFPPs also indicated that supportive footwear that is designed to provide individuals with better grip in winter conditions (e.g., Polar Cleats™ or detachable rubber soles with toe picks on them) are not necessarily "Elder-friendly" and actually have the potential to increase their likelihood of experiencing a fall on indoor surfaces. Juanita, a LFPP, explained:

> It's hard for them to take off when they come inside. So, a lot of them just wear them all of the time because…it takes a little bit of extra strength to get them on [and off] your feet…They're not really Elder-friendly because a lot of Elders can't bend over, and a lot of Elders don't have the strength to pull those foot guards right over their boots. So, they just leave them on their boot, [which increases their likelihood of slipping on indoor flooring because there is nothing to grip].

Beyond the participants' opinions on footwear and the influence it has on increasing Inuvialuit Elders' fall-risk, four participants (1 female LFPP, 1 male Inuvialuit Elder, and 2 female Inuvialuit Elders) indicated that excessive alcohol consumption can increase the likelihood of an Inuvialuit Elder experiencing a fall. As local Inuvialuit Elder, Patrick (64 years old), stated, "I don't really like…to say this—but alcohol. It's a big [health and fall-risk] factor on the Elders' [falls]." Moreover, three participants (1 male LFPP, and 2 female LFPPs) felt that personal health practices, such as diet and prescribed medications, can also increase the likelihood of Inuvialuit Elders experiencing a fall-related injury or fatality. For example, poor diets were suggested as increasing an Elder's risk of falling due to generalized weakness, fatigue, and frailty (i.e., due to inadequate nutritional intake), whereas some medications were suggested as increasing one's chances of falling as a result of their drug-induced side-effects (e.g., drowsiness, dizziness, gait and/or visual disturbances, etc.).

Lastly, four participants (1 male LFPP, and 3 female LFPPs) argued that Inuvialuit Elders' personal health practices—more specifically, their personal health behaviours—can also increase their chances of experiencing a fall. The following example provided by LFPP, Jenel, highlights some health behaviours that may increase an Elder's likelihood of experiencing a fall:

> They [Inuvialuit Elders] don't want your help [laughs]. And, you know, sometimes you're just letting them go 'cause that is their pride, and that is the only thing that they hold to themselves—that they [can remain] independent…They [feel they] don't need the help or [want to] try out the exercises [that improve muscle strength and endurance] in here [the local rehabilitation centre] [laughs].

Another LFPP, Susan, also provided an example highlighting health behaviours that can increase one's fall-risk:

> And you see this—you see that social withdrawal, that social isolation happening a lot—and not just with dementia, [but also] with community-dwelling Elders. And it's a huge issue, social isolation. Because it's a protective coping mechanism, right? It's a way they have of just—it's almost like, "Well, I'm afraid—but it's not that I'm too afraid. It's just that if I don't go to do it [walk outside with a cane or walker, for example], then there's no chance of me falling, or me making a fool of myself, or me looking like an idiot in front of the community"—or all these different things, you know?

Physical environments. Participants (1 male LFPP, 5 female LFPPs, 4 male Inuvialuit Elders, and 4 female Inuvialuit Elders) commonly cited that both outdoor and indoor physical environments (and their corresponding conditions) had the potential to increase the likelihood of an Inuvialuit Elder experiencing a fall. As a result, most participants agreed that Inuvik's winter conditions (e.g., extremely cold temperatures, relatively consistent snowfall, icy surfaces, etc.) substantially increase Elders' risk of experiencing a fall-related injury and/or fatality. Jean (80 years old), a local Inuvialuit Elder, simply stated, "Honestly, this kind of icy weather—it's very dangerous."

Moreover, with regard to indoor physical environments, both LFPPs and Inuvialuit Elders identified various factors inside private (e.g., one's home) and public (e.g., hospitals, recreation centres, etc.) buildings that can also increase Elders' fall-risk. Some of the most commonly cited fall contributors included overcrowding, trip hazards (e.g., throw rugs, raised/heightened bathtubs, etc.), ineffective and/or lack of assistive living devices (e.g., wobbly rails, unavailable/missing ramps, etc.), and building floor plans (e.g., number of stairs, floor material, etc.). However, despite the general consensus regarding the concerns about these indoor

physical environment factors, it is important to highlight that it was predominantly LFPPs, not Inuvialuit Elders, who identified fall-risk contributors in public settings.

My observations at the Elders' Day Program and Ingamo Hall supported the aforementioned findings, but also allowed me to identify factors that may also potentially increase Inuvialuit Elders likelihood of experiencing a fall at these locations. For example, at the Elders' Day program, handrails were only installed in the washrooms (i.e., these assistive living devices were absent throughout the rest of the facility). This observation was particularly worrisome because for frail Elders, or Elders who have difficulty with their balance, handrails needed to safely move throughout the Elders' Day Program were indeed missing. By not having handrails installed throughout the facility, this physical environment therefore may increase the possibility of Inuvialuit Elders experiencing a fall or fall-related injuries.

In addition to the Elders' Day Program, I observed and identified some potential fall hazards at Ingamo Hall. The building's design, specifically the main entrance, was not designed in consideration of Elders in Inuvik. For example, the metal front door made it very difficult for Elders with mobility issues to enter the building. In fact, many Elders had to decide between opening the door and using their assistive mobility devices (e.g., canes or walkers); increasing their likelihood of experiencing a fall as a result of not being able to properly using their mobility aides. Moreover, the door was installed and fitted in a raised doorframe, which was a common tripping hazard for many of the Elders attending Ingamo Hall's luncheons; thus, increasing the likelihood of the Elders attending these events experiencing a fall.

Social support networks. Despite some LFPPs and Inuvialuit Elders arguing that there is a strong sense of community in Inuvik, and that people living in the community typically have reliable social support networks, four participants (1 male LFPP, and 3 female LFPPs) also

indicated that the personal perceptions of falls prevention of those in Inuvialuit Elders' support networks might also indirectly increase these Elders' likelihood of experiencing a fall. For example, Chelsey explained that some Elders' caretakers and/or families may simply not understand or see the Elders' need for mobility aides: "Their families won't buy them 'cause they either don't have the money or they don't want to spend their money on that." Additionally, these participants referred to the idea of individuals "over-caring" for their parents/grandparents; specifically, they felt that these individuals took meaningful engagement and physical activity opportunities away from Inuvialuit Elders, which may then increase their likelihood of experiencing a fall-related injury. Crystal M explained:

> I think sometimes our Elders get taken care of a lot. So, they're doing less meaningful engagement. So, they're not cooking for themselves, they're not getting their groceries, they're not walking around—they're more housebound…Because there is less meaningful occupation, they can get weakened because they're not walking around. They're not lifting things up. They're not doing things that they had been doing previously because the family's taking care of them.

Access to health services. Four participants (4 female LFPPs), all of whom were health care providers, felt that Inuvialuit Elders were not always guaranteed access to health services (e.g., ambulation services, health insurance, physiotherapy, occupational therapy, etc.), which could have an impact on their likelihood of experiencing a fall. As one LFPP participant, Chelsey, explained, access to falls prevention services, such as home assessments and modifications, are sometimes delayed by local housing corporations (i.e., some LFPPs believed that the housing corporations do not necessarily ensure that needed mobility modifications for Elders' homes are done immediately) or not covered by insurance (e.g., Non-Insured Health

Benefits). Further, Juanita, argued that existing services and programs [e.g., long-term care (i.e., facilities for individuals who can no longer remain safely in their own homes/communities and are thus provided 24-hour care), home and community care (i.e., respite care, home support, and specialist services, as well as social support programs like Elders Day Program), supported living programs (i.e., services, such as nurses who provide 24-hour home care, that enable Elders to continue living independently), etc.] do not provide Inuvialuit Elders with enough opportunities to learn about falls prevention: "I think they [Inuvialuit Elders and their caretakers/family members], a lot of them, lack education on falls, and what prevents falls."

SDHs that Decrease Likelihood of Falls

Personal health practices and coping skills. Whereas LFPPs felt that traditional footwear (e.g., kamiks, mukluks, etc.) were more likely to increase an Inuvialuit Elder's likelihood of experiencing a fall, the Inuvialuit Elders who participated in this research, as well as one LFPP, felt that their traditional footwear actually *reduces* their chances of falling, and increases their sense of security, as long as they are properly maintained. Juanita explained:

> Actually, mukluks are better [than mainstream footwear] if they're not worn really bad. Because mukluks…aren't slippery 'cause the hide is still not at the slippery…shiny [stage]. So, they probably have a better grip in mukluks than they would in normal footwear.

Although, as described above, some participants felt that supportive footwear such as Polar Cleats™ were not considered "elder-friendly," two participants (1 male LFPP, 1 female LFPP) indicated that these aides generally decreased the likelihood of an Inuvialuit Elder experiencing fall-related injuries. Juanita, a LFPP, felt that all the Inuvialuit Elders she interacted with used them to prevent themselves from slipping (and potentially falling) during the winter

months in Inuvik, and explained, “My Elders [i.e., the Elders with whom she works] all have them [Polar Cleats™] on their shoes.”

Access to health services. Despite some participants (4 female LFPPs) identifying issues with access to health services in Inuvik, 3 female Inuvialuit Elder participants argued that the existing health services (e.g., disease and injury prevention activities, healthcare, hospital- and home-care, etc.) generally decreased the likelihood of an Inuvialuit Elder experiencing a fall. Local Inuvialuit Elder, Jean (80 years old), explained, “If you got good doctors, they help you a lot [with preventing health concerns, like falls].” Alice (74 years old), another local Inuvialuit Elder, also felt that Elders had all the services they needed to take care of their health and well-being, including the programs and interventions needed to prevent a fall: “We [Inuvialuit Elders] have everything.”

SDHs that Have No Influence on Falls

Culture. Among the LFPPs and the Inuvialuit Elders, thirteen of the fourteen participants (5 female LFPPs, 4 male Inuvialuit Elders, and 4 female Inuvialuit Elders) addressed the relationship—or rather, lack thereof—between the likelihood of an Inuvialuit Elder (or any other Aboriginal Elder) experiencing a fall-related injury and/or fatality and their culture. There was resounding agreement among these participants that one’s culture had no influence and did not affect the likelihood of an Elder experiencing a fall. Alice (74 years old) explained, “Anybody could fall, so it’s—it’s not only Inuvialuit—it’s all.” Jean (80 years old) also agreed and stated, “Anybody can get, you know, [hurt from falling]—it’s common to anybody.” The following statement from Susan, a LFPP, succinctly summarized the participants’ opinions towards the lacking connection between one’s culture and the likelihood of them experiencing a fall:

> I mean, something like falls—you're talking about a pretty specific thing, right? I don't see how it changes, and maybe you can tell me how it does. I don't see how it changes cultural or ethnic lines. How is it that an Inuvialuit Elder versus a Gwich'in Elder, versus an Indian elder, versus an African elder—how is there that possibility of them experiencing a fall any different?

Despite the fact these participants all strongly opposed the identification of culture as a fall-risk contributor, one participant (1 female LFPP) felt that including cultural activities [e.g., going out on the land, jiggling (fishing), hunting, etc.] was a strategy that falls prevention programmers and healthcare professionals can, and should be used, to decrease the likelihood of an Inuvialuit Elder experiencing a fall. Susan explained:

> With one of our Elders up here, we're out setting rabbit snares. And one of the reasons why I'm doing that—besides all the psychosocial benefits of that—one of my goals, or I should say the goal we agreed on, is exercise. When we're doing the snares, it forces her—she's out walking on uneven ground; it challenges her balance; she's got to get down on her hands and knees to do the snare—whatever, you know? But that's using her background to maintain what she has, right?

Discussion

In this study, LFPPs and Inuvialuit Elders identified the determinants of health that they believed increased the likelihood of falls, decreased the likelihood of falls, and had no influence on falls. This research makes an important contribution to better understanding the ways in which falls prevention initiatives can be tailored to meet Inuvialuit Elders' needs. Below, I discuss the SDH identified by the participants and the ways in which these findings support or

challenge existing literature. I also identify potential steps that can be taken to improve falls prevention programs for Inuvialuit Elders and areas for future research.

SDH

Personal health status and conditions. Aboriginal peoples are overrepresented in physical health disparities and inequalities in comparison to their non-Aboriginal counterparts (Health Canada, 2012; Somogyi et al., 2015). This is especially evident among the Inuvialuit population (Erber, Beck, De Roose, & Sharma, 2010; Hopping, Erber, Beck, De Roose, & Sharma, 2010; Owens et al., 2012). Past studies have indicated that approximately 30% of Inuvialuit peoples are at high risk of developing one or more chronic health condition (Inuit Tapiriit Kanatami, 2008; NWT Health and Social Sciences, 2005). Moreover, it has been predicted that the Inuvialuit may come to develop the highest rates of type 2 diabetes and cardiovascular disease in Canada's arctic region (Owens et al., 2012). Thus considering the fact that falls are further compounded by chronic health problems, it is not surprising that participants identified personal health status and conditions as having an impact on their likelihood of falling.

Additionally, knowing that Inuvialuit peoples experience greater health disparities in comparison to non-Aboriginal peoples is valuable information for LFPPs in Inuvik. By understanding that Inuvialuit peoples have higher rates of poor health, LFPPs can—if needed—provide more care for their Inuvialuit patients. In this vein, LFPPs could provide Inuvialuit Elders with tailored falls prevention programs that also assist with the management of their chronic conditions and health issues. Inuvialuit Elders could benefit from programs that included information about the risk factors associated to specific conditions, as well as information pertaining to the strategies that can assist them in managing their symptoms and decreasing their risk of falling. Including health condition management in Inuvialuit Elders' falls prevention

programs may also be a strategy that aids in reducing Inuvialuit peoples' overall health inequalities. Further research that links data on falls and personal health status in Inuvialuit communities would help to identify the factors that increase Inuvialuit Elders' fall risk, which would enable researchers and practitioners to strengthen falls prevention interventions for this population.

Personal health practices and coping skills. Participants also identified personal health choices and coping skills as influencing the likelihood of an Inuvialuit Elder experiencing a fall. Choice of footwear was given a great deal of attention by the participants in this study. It is generally understood among falls prevention researchers and practitioners that shoes with soles that are too thick, treads that are too smooth, and heels that are too high and/or narrow increase the potential for falls (Scott, 2012b; Tencer et al., 2004). Some of the LFPP participants felt that the traditional footwear, such as kamiks and mukluks, and supportive footwear, such as Polar Cleats™, worn by Inuvialuit Elders increase their likelihood of experiencing a fall. They believed that the kamiks and mukluks, for example, met the second criterion of what constitutes inappropriate footwear for older adults because the hide of the traditional Inuvialuit footwear can become smooth due to wear and overuse. On the other hand, the Polar Cleats™ fall into the first category of inappropriate footwear because a detachable sole with toe picks makes the sole of the wearer's boot or shoe thicker, which may then make it more difficult for an Elder to detect uneven surfaces or obstacles that may cause them to fall (Scott, 2012b).

In contrast, the Elders involved in this study, as well as one LFPP—argued that Inuvialuit Elders' footwear choices actually *decrease* their risk of falling. The Elders argued that the issue of slickness with regard to kamiks and mukluks can be prevented as long as the hide used on the bottom of these items is properly maintained. In addition, the Elders stated that the thicker soles

that are created as a result of wearing Polar Cleats™ do not to outweigh the general need for these items' use. Overall, the Elders argued that they require the additional traction that kamiks, mukluks, and Polar Cleats™ provide due to the intensely icy conditions they often experience during the wintertime.

Footwear guidelines for seniors were not created with kamiks, mukluks, and northern conditions in mind. Falls prevention professionals need to adapt the guidelines depending on the elderly individual's cultural and geographic context. Shoes that fall prevention professionals may typically consider as fall hazards, such as Inuvialuit Elders' kamiks and mukluks, may instead be fall prevention footwear for this population—if the footwear is well maintained. It is also important for falls prevention educators to be sensitive to the cultural importance of traditional footwear and the fact that it has been worn successfully by Inuvialuit peoples since time immemorial. Advising that Elders stop using such footwear could be considered as an unwelcome colonial intervention.

Alcohol use is another personal health practice and coping skill that participants identified as increasing the likelihood of an Inuvialuit Elder falling. To date, no studies have addressed alcohol use and abuse among the Inuit elderly population (Somogyi et al., 2015), or its impact on the likelihood of experiencing a fall. Studies have, however, been conducted with other populations. According Rigler (2000), community-dwelling seniors who drink excessively are more likely to experience a fall due to the effects alcohol and also due to it interacting with particular prescription drugs, which then produces significant changes to their balance, gait, and bodily awareness. Kurzthaler and colleagues (2005) also found that seniors (i.e., individuals aged 70 and older, and admitted to the emergency room of the local teaching hospital in Innsbruck,

Austria) were more likely to be admitted to emergency for a fall-related injury as a result of excessive alcohol consumption.

It is vital that falls prevention professionals be respectful when broaching the role alcohol may have in increasing Inuvialuit Elders' chances of falling due to the sensitivity of excessive alcohol use and addiction, and particularly as alcohol abuse has been linked to trauma related to the legacy of residential schools (Bombay, Matheson, & Anisman, 2014; Ehrlander, 2010). There is already stigma and discriminatory stereotypes surrounding Aboriginal peoples regarding alcoholism (CBC News, 2014; CBC News, 2017; Quan, 2016; Tang & Browne, 2008), which have resulted in Aboriginal peoples experiencing maltreatment from healthcare service providers. For example, in August of 2016, a 68 year old Inuvialuit man from Aklavik, NWT, died as a result of discrimination and racism (Bird, 2016). Hugh Papik was refused care because nurses at the Aklavik Medical Centre believed that he was drunk. The nurses did not take Papik's health into serious consideration and, as a result, his treatment was significantly delayed (i.e., it took the nurses 6 hours to medevac Papik to the nearest hospital in Inuvik, NWT). Due to this delay, Papik died at the Inuvik Regional Hospital after having had a stroke that cause significant swelling in his brain. Papik's death highlighted how healthcare service providers' biases can be potentially fatal to Aboriginal peoples. It is therefore important that services providers, including falls prevention researchers and practitioners, not assume that Aboriginal patients and clients are alcoholics. By doing so, healthcare providers can limit unnecessary injuries and deaths among this population.

For LFPPs in particular, I recommend addressing and identifying any other fall risk that may increase the patient's/client's likelihood of experiencing a fall. However, if after identifying all fall hazard options it is evident that alcohol is indeed increasing the individual's likelihood of

falling, it is important for the LFPP to address this fall risk factor. When identifying this fall risk factor, LFPPs must be sensitive and respectful.

In addition to alcohol, participants also indicated that diet and prescribed medication increased the likelihood of Inuvialuit Elders experiencing a fall. Certainly, a fall can be due to the fatigue, weakness, frailty, and even acute delirium that can result from dehydration and/or malnutrition (Vetta, Ronzoni, Taglieri, & Bollea, 1999; Vivanti, McDonald, Palmer, & Sinnot, 2009), or side effects from medications, such as anticoagulants, anticonvulsants, antidepressants, and antipsychotics (Bloch et al., 2010; Cadario & Scott, 2010; Hartikainen, Lonnroos, & Louhivouri, 2007). Indeed, poor diets and prescribed medications can increase the likelihood of an older adult falling, as well as increase the possibility of sustaining more serious fall related injuries (Bloch et al., 2010; Cadario & Scott, 2010; Hartikainen et al., 2007; Vetta et al., 1999; Vivanti et al., 2009). Inuvialuit Elders are not exempt from these fall-inducing factors; thus, it is important for LFPPs to also be aware of these risks when developing falls prevention programs for this population.

Access to health services. Though there is significant evidence of Aboriginal peoples being denied access to an array of health services in Canada (Galloway, 2017; Larson, Herx, Williamson, & Crowshoe, 2011; Reading & Farber, 2015; Senese & Wilson, 2013), the elderly participants in this study felt that their likelihood of experiencing a fall decreased due to their ability to access and use pre-existing services and programs available in Inuvik, such as healthcare, home-care, medevac, physical activity programs (e.g., the senior fitness classes available through the Beaufort-Delta Health and Social Services), and rehabilitation services (e.g., the home assessments and modifications offered by the Inuvik Regional Hospital's Rehabilitation Department's occupational therapists and the pre-existing falls prevention

programs offered by the Rehabilitation Department's physiotherapists). While most of the Elders were quite enthusiastic about the care they received, the LFPPs—and several Inuvialuit Elders—in this study identified that some Inuvialuit Elders may not engage in potentially helpful falls prevention programs available through health services due to a fear of judgement from community members, fear of losing independence and autonomy, and even simply lack of interest in falls prevention interventions. These finding align with those of other studies, where engaging in risk-taking behaviours (e.g., clearing snow and ice off a walkway, climbing up a ladder, etc.) (Scott, 2012b), reducing one's participation in physical activity (Sherrington & Lord, 1998; Gregg, Pereira, & Caspersen, 2000), and not using assistive devices, such as canes and walkers, as a result of negative intra- and interpersonal opinions (Gallagher, Scott, Thomas, & Hughes, 2002) were all found to increase the risk of seniors' falls.

There are various ways for LFPPs to assist Inuvialuit Elders in overcoming these barriers. First, LFPPs can attempt to reduce the stigma around falls and falls prevention programs within the community. By educating the public that falls are preventable and not an inevitable outcome of aging, as well as conveying the idea that everyone can have a role in reducing the community's likelihood of experiencing fall-related injuries, LFPPs can potentially normalize their programs and interventions. The second recommendation for LFPPs is to take on an empathetic approach while implementing their programs and interventions. LFPPs need to be sensitive to the fact that engaging in a falls prevention program and using falls prevention interventions, such as mobility aides, is a significant change to an Elder's life. LFPPs can teach Inuvialuit Elders how they can incorporate these programs into their everyday lives, and emphasize how falls prevention interventions can actually aid in their ability to maintain their independence and autonomy.

Physical environments. Indoor and outdoor falls risk hazards can be present in private and public spaces (i.e., in the home or in community/institutional locations), and the interactions seniors have *with* and *within* these settings may also influence their likelihood of experiencing a fall (Scott, 2012b). Indeed, a review conducted by Feldman and Chaudhury (2008) reported that 40% to 60% of falls among older adults were related to environmental hazards. These factors therefore pose serious threat of causing elderly populations to experience fall-related injuries and/or fatalities.

In terms of Inuit peoples' indoor physical environments, their housing conditions—and its affect on their overall health—have been well-documented in the literature. Evidence suggests that Inuit peoples have homes that are typically in need of major repair (i.e., they are made of substandard construction materials), are culturally inappropriate in design (i.e., they do not enable families to incorporate traditional Inuit activities into their everyday lives), and are often overcrowded (Egeland, 2011; Minich et al., 2011). Overcrowding has been identified as negatively affecting Inuit peoples' well-being (i.e., overcrowding increases the transmission of infectious diseases, decreases individuals' psychological well-being, etc.) (Minich et al., 2011). According to Minich et al. (2011), 11.6% of Inuvialuit peoples from the Inuvialuit Settlement Region live in overcrowded homes. This means that a significant percentage of the Inuvialuit population experiences the aforementioned negative side effects of overcrowding.

After considering these findings, it is clear why the participants indicated overcrowding, as well as other related indoor factors (e.g., trip hazards, ineffective and/or lack of assistive devices, and ineffective building floor plans), as fall contributors for Inuvialuit Elders. This finding is particularly important because it highlights that Inuvialuit Elders may be in greater need of home assessments and modifications in order to identify and address all the potential fall

hazards in their household. LFPPs should thus continue conducting these assessments, as both Inuvialuit Elders and LFPP agree that it is a useful strategy for reducing Elders' likelihood of experiencing a fall. However, they should be done with the Elder's permission.

It is also important for LFPPs in Inuvik to develop and implement falls prevention programs with Inuvialuit Elders' outdoor physical environment in mind. Inuvialuit Elders live in a particularly challenging natural physical environment due to the presence of ice and snow for elongated periods of time. Both Inuvialuit Elders and LFPPs are aware of these risks and how the harsh winter conditions that Inuvialuit Elders experience contribute to their falls; it is therefore necessary that LFPPs continue to provide interventions that are adapted to Inuvialuit Elders' physical environment, as well as ensure that their falls prevention programs enable Elders to avoid falling in this terrain.

Future researchers and practitioners should thus specifically look for these common risk factors when conducting environmental fall assessments for Inuvialuit Elders. By identifying these factors, falls prevention professionals can better educate Inuvialuit Elders in Inuvik on effective ways to mitigate these hazards.

Social support networks. There are direct links between social factors and fall risk (Chappell & Prince, 1994; Fabre, Ellis, Kosma, & Wood, 2010; Faulkner, Cauley, Zmuda, & Nevitt, 2003; Scott, Pearce, & Pengelly, 2005; Stenbacka, Jansson, Leifman, & Romelsjö, 2002). Faulkner and colleagues (2003), for example, conducted a study that looked into social support networks and the effect they had on elderly Caucasian community-dwelling women's likelihood of experiencing a fall. Of the 6,500+ women who participated in the study, it was found that women with strong and supportive family relationships were less likely to experience a fall (Faulkner et al., 2003). Stenbacka et al. (2002) examined fall rates among males and females

aged 20-89 in Stockholm, Sweden, and attempted to determine which factors were likely to contribute to their falls. One of their more prominent findings indicated that older men (i.e., individuals 60 years old and older) who lived alone and who lacked significant social support networks experienced higher fall rates in comparison to those who did not (Stenbacka et al., 2002). It is evident from these examples that seniors' social relations (or rather lack thereof) may directly impact their likelihood of falls.

Interestingly, the LFPPs' opinions regarding Inuvialuit Elders' social support networks and the impact it had on Elders' likelihood of experiencing a fall contradicted both Faulkner et al.'s (2003) and Stenbacka et al.'s (2002) findings. LFPPs indicated that having a support system could actually increase an Elder's likelihood of falling. This is because the individuals Inuvialuit Elders include in their network may be unaware of the detrimental impacts their beliefs and behaviours towards falls have on Elders. Yet, it is *not* recommended that LFPPs in Inuvik exclude Inuvialuit Elders' support systems from the falls prevention process; rather, LFPPs should work *with* them. By including these individuals in Inuvialuit Elders' falls prevention programs, LFPPs can help them to understand the causes of falling, how to identify and modify fall risk factors, and what strategies they can use to reduce Elders likelihood of experiencing a fall. This strategy would also enable LFPPs to reiterate the importance and benefits of falls prevention programs and interventions to both the Elders and their social support networks; that is, if Elders' support systems see these programs and interventions as helpful tools for Elders to maintain their health and independence, Elders will likely be more inclined to participate in falls prevention programs. Therefore, LFPPs should strive to include Inuvialuit Elders' social support networks in the implementation and use of Elders' falls prevention programs.

Culture. According to Anderson and colleagues (2003), culture is the "integrated patterns of human behavior that include language, thoughts, communication, actions, customs, beliefs, values and institutions of ethnic, religious, or social groups" (p. 68). From this definition, it is clear that culture influences the decisions, interpretations, and meanings significant to individuals' personal lives (Duncan & Ley, 1993). Risk perception, or the subjective judgments that people make about the characteristics and severity of a risk (Rohrmann & Renn, 2000), can therefore also be influenced by one's culture. That is, "perceptions of acceptable risk" (Giles, Hogenstad, & Brooks, 2015, p. 543) have been found to be considerably dependent on individuals' cultural backgrounds and worldviews (Giles, Castledan, & Baker, 2010; Masuda & Garvin, 2006). Considering the influence of culture, it is reasonable to assume that it "plays important roles in injury prevention, as it informs behavioural decisions related to risk taking and healthy lifestyles" (Giles et al., 2015, p. 543). Consequently, falls prevention researchers and practitioners *should* make an effort to understand the impact culture has on seniors' fall risk and rates.

Despite the explicit suggestions from injury prevention research, it was surprising that the participants in this study outwardly refuted the potential connection between culture and falls. As a matter of fact, the majority of the participants fiercely challenged and criticized the notion that a relationship between the two existed. Upon further discussion with the LFPPs and Inuvialuit Elders, it was revealed that questioning the influence of one's culture on the likelihood of experiencing a fall was considered insulting and even discriminatory. By identifying one's culture, as well as other various cultural factors, as potential fall risk contributors, falls prevention professionals could inadvertently re-emphasize existing negative beliefs and information about Aboriginal peoples. In fact, by linking culture with injury, researchers and

practitioners risk reinforcing a narrative that Inuvialuit culture is harmful and injurious. Therefore, due to the sensitive nature of culture, and its importance within colonial efforts to eradicate Aboriginal peoples, falls prevention researchers and practitioners working with Inuvialuit Elders need to be careful when broaching falls risk factors. Professionals should refrain from specifically accentuating that culture *alone* increases fall risk, and instead be cognizant that it may indirectly influence their likelihood of experiencing a fall. For example, if a falls prevention researcher were to ask, "Do you believe being Inuvialuit increases your chances of experiencing a fall?", most Elders would be offended because it has a more abrasive and culture-blaming tone. In comparison, if the same individual asked, "Do you think you have a higher chance of falling if you are wearing smooth and slick mukluks?", Elders are more likely to provide you with their insight regarding this potential fall hazard. It is therefore reasonable for future LFPPs and falls prevention researchers working with Inuvialuit Elders to have these conversations in order to co-identify cultural factors that may influence their falls risk and rates; however, these professionals need to avoid framing their probing questions in a way that labels Inuvialuit culture as a fall hazard.

In this study, aspects of Inuvialuit culture were identified as possible fall risk factors (e.g., their traditional footwear, such as kamiks and mukluks); however, one LFPP argued that Inuvialuit cultural activities [e.g., going out on the land, jiggling (fishing), hunting, setting up snares (a wire or rope noose used to trap small animals), etc.] could actually be used to decrease Elders' likelihood of experiencing a fall. Though jiggling, hunting, etc., are not typically included in generic falls prevention programs, these activities can, and I would argue should, be included in the physical activity component of Inuvialuit Elders' falls prevention programs. These culturally appropriate activities might help to compensate for the normal age-related

changes Elders experience, and thus might play a role in reducing their likelihood of falling. Thus, researchers and practitioners should identify how culture and traditional activities can be used to develop falls prevention programs and interventions that are culturally appropriate for Inuvialuit Elders.

Conclusion

Although there is limited information pertaining to the influence of the SDH on Canadian seniors' falls, these factors have not been considered through the perspective of Inuvialuit Elders and LFPPs. The interviews conducted with Inuvialuit Elders and LFPPs in Inuvik thus enabled the identification of the SDH that participants believe increase, decrease, and have no influence on the likelihood of Inuvialuit Elders experiencing a fall and fall-related injuries.

While these findings provide researchers and practitioners with the information needed to better manage and mitigate Inuvialuit Elders' fall risk, they also highlight how Inuvialuit Elders' fall risk factors continue to be influenced by colonialism. As a result of Canada's colonial past, Inuvialuit peoples are overrepresented in many poor health measures; that is, they experience higher rates of physical health disparities and mental health issues, live in overcrowded homes, have limited access to health services, lower incomes, and fewer educational opportunities (Egeland, 2011; Inuit Tapiriit Kanatami, 2008; Minich et al., 2011NWT Health and Social Sciences, 2005; Owens et al., 2012; Richmond, 2009). Discrimination and racism often further exacerbate Inuvialuit peoples' health inequalities, making it that much more difficult for them to seek and receive the care they need. It is therefore important that LFPPs working with Inuvialuit Elders not only be cognizant of these disadvantages when developing their falls prevention programs, but establish strategies that address these broader issues as well.

Future studies should consider separately exploring the effect the SDH have on First Nations, Métis, Inuit, and other sub-populations Elders' fall rates in order to better understand important differences between these populations, and to prevent generalizing findings among Aboriginal Elders.

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Chapter 3: Culturally Safe Falls Prevention Program for Inuvialuit Elders in Inuvik, Northwest Territories, Canada: Considerations for Development and Implementation

Abstract

Current falls prevention literature suggests that Aboriginal Elders in Canada have higher rates of falls and fall-related injuries in comparison to their non-Aboriginal counterparts (Reading et al., 2011). Despite this evidence, information regarding Inuit Elders' experiences with falling is severely lacking. Moreover, ways in which to make Inuit falls prevention programs culturally safe is missing from the injury prevention literature. Using postcolonial theory as a theoretical framework for this research, I sought to determine what current falls prevention recommendations are offered by local falls prevention programmers (LFPPs) in order to reduce fall rates among Inuvialuit Elders in Inuvik, Northwest Territories, Canada; and to understand how falls prevention programs for Inuvialuit Elders can be co-created with participants to be culturally safe. The findings from twelve semi-structured interviews showed that Inuvialuit Elders and local falls prevention programmers (LFPPs) in Inuvik recommend adding environment assessments and modifications, physical activity, and education for Elders and caretakers in pre-existing programs. The participants also felt that for culturally safe falls prevention programs to occur, LFFPs must include the following strategies: establish trust and rapport within the community, include both Aboriginal and non-Aboriginal interventions in falls prevention programs, and train others on cultural safety practices. The results from this study challenge current falls prevention practices and indicate that falls prevention researchers and practitioners should carefully consider how they develop and implement falls prevention programs for/with Inuvialuit Elders.

Statistics Canada (2015a) has recently estimated that one in four Canadians will be over the age of 65 by 2051, which means that the Canadian senior population will become one of the most dominant demographics in the country (Public Health Agency of Canada [PHAC], 2016). The projected growth of the Canadian senior population also means that the prevalence of this group experiencing injuries, specifically fall-related injuries, is anticipated to increase (Hill, Pinto, Nathens, & Fowler, 2014; Peel, Kassulke, & McClure, 2002). Thus, due to the growing rate of fall-related injuries and fatalities among Canadian seniors (Hill et al., 2014; Registered Nurses Association of Ontario [RNAO], 2005), it is clear that this population is in need of falls prevention programs (Beauvais & Beauvais, 2014; Hill et al., 2014; Gillespie et al., 2012; Naraynsingh et al., 2015; RNAO, 2005; Semonin-Holleran, 2015; Statistics Canada, 2012; Stewart-Williams et al., 2015).

Recent studies have shown that falls prevention programs are beneficial in reducing falls amongst the elderly (Beauvais & Beauvais, 2014; Gillespie et al., 2012); however, not all groups are equally vulnerable to injury. Research has shown that Aboriginal peoples (i.e., First Nations, Métis, and Inuit) in Canada experience injuries at higher rates than non-Aboriginal Canadians (Bjerregaard, Young, Dewailly, & Ebberson, 2004; PHAC, 2016). Moreover, the only data available on Inuit Elders in Canada emphasize their exceptionally low life expectancy in comparison to non-Inuit seniors (PHAC, 2016), which provides a generalized overview of their injury rates (i.e., there is limited information pertaining to fall-related injuries among the Inuit) (Bjerregaard et al., 2004). Given the overrepresentation of Aboriginal peoples' poor outcomes on almost every health measure, including injury (Loppie-Reading & Wien, 2009), it is reasonable to assert that Inuit Elders are also over-represented in fall-related injuries and fatalities; therefore, they are in need of falls prevention programs.

Though Inuit Elders require falls prevention programs, most programs available to Canadians are currently not culturally safe. Cultural safety is an approach to health policies, programs, and services that aims to disrupt the power imbalances between researchers/practitioners/programmers and clients, to understand their influence on participants' day-to-day lives, and to ensure that these professionals respect and acknowledge participants' contextual, cultural, historical, and social experiences (Christensen, 2016; Fulcher, 2001; Giles, Hognestad, & Brooks, 2015). As a result, this approach to research and practice recognizes Aboriginal peoples' culture (Smye & Browne, 2002). Cultural safety presents current and future falls prevention researchers/practitioners/programmers with the opportunity to recognize Inuit peoples' culture and Inuit Elders' knowledge as valuable in the creation and implementation of falls prevention practices.

In an attempt to address these areas of interest, I conducted research in Inuvik, Northwest Territories (NWT) (68°21'N, 133°43'W). Inuvik is a community 1068km northwest of Yellowknife and located on the Mackenzie River Delta (NWT Bureau of Statistics, 2016a). Inuvik has a population of 3,170 residents, of which 2,059 self-identify as Aboriginal (NWT Bureau of Statistics, 2016b). The Aboriginal populations in the community primarily consist of Inuvialuit (Inuit), Gwich'in (First Nations), and Métis peoples. Recent statistical demographic profiles of these groups are unavailable; however, Statistics Canada (2007) cited these groups as representing 38.9% (Inuvialuit), 18.4% (Gwich'in), and 4.7% (Métis) of Inuvik's population. The NWT Bureau of Statistics (2016b) also identified that Inuvik has an elderly population (i.e., individuals 60 years old and older) of 359 people (no breakdown by ethnicity is available). Aboriginal Elders and non-Aboriginals seniors thus comprise approximately 11.3% of Inuvik

residents (NWT Bureau of Statistics, 2016b). For my research, I conduct research with Inuvialuit peoples.

Although the elderly population in Inuvik is relatively small, this demographic – and its likelihood of experiencing a fall or fall-related injury – is expected to grow. Falls prevention researchers and practitioners in this community must continue to provide interventions that reduce Inuvialuit Elders' risk of falling, but they also need to work with the Elders to determine the cultural safety of falls prevention programs. The lack of information related to Inuvialuit Elders in current Canadian falls prevention research inspired me to conduct research with Inuvialuit Elders and local falls prevention programmers (LFPPs) in Inuvik. The participants and I sought to address the following questions: "What are the current falls prevention recommendations (from research participants) to decrease fall rates among Inuvialuit Elders?"; and "How can falls prevention programs for Inuvialuit Elders be co-created (with research participants) to be culturally safe?"

Using postcolonial theory (Boehmer, 1995; Gandhi, 1998; Judd, 1996; McEwan, 2009; Scott, 2014) as a theoretical framework and thematic analysis (Braun & Clarke, 2006) to analyze the data from my 12 semi-structured interviews with LFPPs and Inuvialuit Elders, I identified (a) recommendations for three components of falls prevention programs in Inuvik, which included environment assessment and modification, physical activity, and education for Elders and caretakers; and (b) recommended strategies for the development of a culturally safe falls prevention program for Inuvialuit Elders, which included establishing trust and rapport within the community, including both Aboriginal and non-Aboriginal interventions in falls prevention programs, and training others on cultural safety practices. The results from this study challenge current falls prevention practices and indicate that falls prevention researchers and practitioners

should carefully consider how they develop and implement falls prevention programs for/with Inuvialuit Elders.

Literature Review

To examine the aforementioned research questions, I situated my research within three areas: Inuit peoples' health, specifically Inuit Elders' health; the status of falls among Aboriginal Elders, and the need for culturally safe falls prevention programs for Aboriginal Elders.

State of Inuit Elders' Health

With Canadian citizens generally living longer, healthier lives, it is not surprising that Canada's population is considered one of the healthiest in the world (PHAC, 2016). In fact, it has been reported that almost 90% of Canadians believe they are in good to excellent health—highlighting that these residents indeed experience exceptional overall health (PHAC, 2016). However, despite evidence of these positive national health trends, Aboriginal peoples in Canada fare much worse than non-Aboriginal Canadians. As indicated by recent studies, Aboriginal peoples experience some of the greatest health inequalities in the country. Researchers have argued that this population experiences higher rates of chronic diseases (e.g., diabetes, cardiovascular disease), communicable diseases (e.g., tuberculosis), physical inactivity, and mental health issues (e.g., drug abuse, addiction, and suicide) than non-Aboriginal peoples (Health Canada, 2012; Somogyi, Barker, MacLean, & Grischkan, 2015). Due to these high rates, Aboriginal peoples' health inequalities have thus become an area of interest for many health researchers and government organizations. Yet, information related to Inuit peoples' health is rather limited and understudied.

Studies have found that the Inuit population experiences some of the highest mortality and health disparity rates in Canada (Statistics Canada, 2012). Regarding maternal, fetal, and

infant health, researchers have found that Inuit peoples have much higher teenage pregnancy, preterm births, stillbirths, and infant mortality rates than the national averages (Cameron, 2011; Luo et al., 2010). In terms of communicable diseases, scholars have indicated that Inuit peoples have higher rates of sexually transmitted infections (e.g., chlamydia, Human Papillomavirus), meningitis, and especially tuberculosis (Cameron, 2011; Hamlin-Douglas, Coutlee, Roger, Franco, & Brassard, 2008; Health Canada, 2016; Steenbeek, Tyndall, Rothenberg, & Sheps, 2006). For chronic diseases, such as diabetes, cancer, cardiovascular disease, and respiratory disease, researchers have also found that Inuit peoples' rates are increasing in comparison to non-Aboriginal Canadians, and have predicted that they will only continue to increase as well (Cameron, 2011; Circumpolar Inuit Cancer Review Working Group, 2008; Dewailly, Chateau-Degat, Ékoé, & Ladoucer, 2007; Tait, 2008). Lastly, with regard to injury, evidence suggests that Inuit peoples are among the most susceptible to suffering from serious health problems as a result of intentional and/or unintentional injuries (Bjerregaard et al., 2004). Intentional injuries include interpersonal or self-inflicted incidences like family violence and assault, while unintentional injuries are often accidental, such as drowning, motor vehicle accidents, or accidental falls (Bjerregaard et al., 2004).

While the body of literature on Inuit health is growing, to date it has focused on Inuit youth, young adults, and middle-age adults (Somogyi et al., 2015); and as a result, very little is known of Inuit Elders in relation to these health disparities. Despite this limitation, there is research currently available that provides a "snapshot" of Inuit Elders' overall health status. For example, according to the Public Health Agency of Canada (2016), Inuit Elders are very unlikely to reach national life expectancies. That is, non-Aboriginal males and females are expected to live to 79 years old and 83 years old, whereas male and female Inuit Elders are only expected to

live to 64 years old and 73 years old respectively (PHAC, 2016). Researchers have also agreed that Inuit Elders' health and well-being are affected by the previously highlighted negative health measures; however, due to the lack of studies on health disparities specific to elderly Inuit individuals, these are predictions of their health status at best (PHAC, 2016; Somogyi et al., 2015). Aside from generally poor physical health outcomes, researchers also indicated that social factors (e.g., isolation and lack of socialization with family, friends and community members), as well as cultural and historical factors (e.g., colonization and acculturation), have progressively worsened the health and longevity of Inuit Elders in Canada as well (Kral, 2011, 2012; Richmond, 2009; Somogyi et al., 2015).

Although the above studies provide researchers with a better understanding of the overall health status of Inuit Elders, information pertaining to their experiences with injury, specifically fall-related injuries, is lacking. There is also scant research on Inuit Elders' fall rates and fall-related injury rates, revealing the need for studies that examine this information. Indeed, in order to develop and implement falls prevention programs that successfully reduce occurrences of falls among Inuit Elders, it is important for researchers and practitioners to consider the cultural dimensions of Elders' health, and for them to recognize and respect the implications they may have on Elders' perceptions of falls and falls prevention programs.

Status of Falls for Aboriginal Elders

According to the Public Health Agency of Canada (2016), the nation's population has officially exceeded 36 million people. Of this 36 million, approximately 5.8 million comprise Canada's elderly population (i.e., individuals 65 years and older) (PHAC, 2016). While these 5.8 million seniors have access to various health services and programs—all of which have extended the longevity and quality of lives of these elderly individuals—health issues associated with

aging have significantly affected this population. In addition to Canadian seniors experiencing higher rates of chronic illnesses, such as arthritis, cancer, cardiovascular disease, diabetes, and dementia (PHAC, 2016), fall rates among this population have been increasing as well. Recent evidence has shown that almost half of Canadian seniors who experience a fall will likely suffer an injury (Herman, Gallagher, & Scott, 2006). Scott, Wagar, and Elliott (2011) also found that falls account for upwards of 85% of all injuries that result in Canadians 65 years and older being hospitalized. It is evident that falls prevention programs are thus needed in order to reduce and prevent falls among Canadian seniors.

Although literature on fall rates, fall-related injuries and fatalities, and falls prevention for seniors in Canada is growing, similar information pertaining to Aboriginal Elders in Canada is significantly lacking. Firsthand accounts of Aboriginal Elders' experiences of falling and their engagement with falls prevention programs are also missing from injury prevention literature; this makes it challenging for researchers and practitioners to understand the scope and nature of falls amongst this population. Moreover, data regarding fall risk factors that either directly or indirectly influence older Aboriginal adults' likelihood of experiencing falls continues to be unknown as well.

Despite this gap in knowledge, it has been postulated that fall rates among Aboriginal Elders in Canada will increase. The only Canadian falls prevention study with a focus on First Nations Elders, conducted by Reading and colleagues (2011), found that fall-related injuries and fatalities are anticipated to rise due to the expected growth of the Aboriginal elderly population in Canada. Reading et al. (2011) also reported that Aboriginal Elders were twice as likely to be hospitalized as a result of falling in comparison to their non-Aboriginal counterparts (Reading et

al., 2011). These findings emphasize the need to better understand why Aboriginal Elders are overrepresented in Canadian fall and fall-related injury rates.

BEEEACH: A Falls Prevention Model

For many falls prevention researchers and practitioners, the adoption of a holistic falls prevention program is considered the best approach for reducing Canadian seniors' fall risk and rates. According to Scott (2012), "the most effective fall prevention interventions [and programs] are those that use a multifactorial approach" (p. 96). These programs often include a number of recommended prevention actions, most of which are in reference to the BEEEACH model (Scott, 2012). As a standard for current Canadian falls prevention programs, the BEEEACH model requires prevention programs to comprise the following elements: behaviour change, education (of program participants), equipment (the appropriate use of mobility aides and assistive devices), environment (in the home and public places), activity (physical and social), clothing and footwear (required for fall risk reduction), and health management (properly assessing and treating any fall contributing medical conditions) (Scott, 2012).

BEEEACH model programs have been found to be successful in reducing fall rates and risk among non-Aboriginal Canadian seniors (Scott, 2012); however, no attempt has been made to understand if BEEEACH model-related falls prevention programs are relevant to Aboriginal Elders in Canada. Interestingly, researchers working with Aboriginal Elders seem to have disregarded the Eurocanadian BEEEACH model, and they have instead developed their own falls prevention program requirements. Recommendations for developing Aboriginal-focused falls prevention interventions and programs were established by Reading et al. (2011) (in partnership with other scholars, practitioners, policy makers, community members, and First Nations Elders). They included the following:

1) Offering fall prevention activities at established events to increase acceptance and accessibility by older Aboriginal people
2) Building fall prevention into existing programming with positive messaging
3) Supporting community-defined evidence-based practice
4) Acceptance and incorporation of culture into health care practices
5) Environmental scan of infrastructure to support
6) Increasing risk assessment skills of home care workers
7) Lifecourse approach to fall prevention practice
8) Partnership to support skill development and education in universities and communities. (Reading et al., 2011, pp. 13-15)

If we take these important cues and insights from Reading et al. (2011), it is evident that Aboriginal-focused falls prevention programs can, and should, be developed and implemented in the future. The issue, however, is that key information concerning Aboriginal Elders who are not First Nations peoples remains absent within the literature. For Métis, Inuit, and other Aboriginal populations, research regarding their fall rates and preventative programs are sparse. Additionally, understandings of the ways in which to include Métis, Inuit, and other Aboriginal peoples' culture in the development and provision of falls prevention education and interventions is also missing from the literature. Falls prevention researchers and practitioners thus need to create programs (with Métis, Inuit, and other Elders) that are best suited to prevent possible fall-related injuries among these populations.

Culturally Safe Falls Prevention Programs for Aboriginal Elders

Before highlighting the need for culturally safe approaches to research concerning falls prevention programs, it is necessary that I first distinguish between the terms cultural

competency, cultural appropriateness, cultural sensitivity, and cultural safety. The first term, cultural competency, refers to a researcher's ability to engage with members of a population while respecting and working within their cultural beliefs (Baker & Giles, 2012; Giles et al., 2015). The second term, cultural appropriateness, is when a researcher is capable of creating and/or sharing research and programs in a way that is "reflective of the diverse cultural and linguistic characteristics of racial and ethnic groups" (Giles et al., 2015, p. 545). The third term, cultural sensitivity, reflects a researcher's ability to incorporate consideration, understanding, respect, and willingness to adapt when developing knowledge and results with their participants (Foronda, 2008; Giles et al., 2015). And the final term, cultural safety, is when a researcher or practitioner is respectful of the population with which s/he is conducting research with, and is reflexive of his/her own cultural beliefs and values because it may influence how the researcher develops their "understanding of whose knowledge is privileged within research, policies, and practices" (Giles et al., 2015, p. 547).

Although all of these terms are important for researchers, it is particularly important for scholars to adopt a cultural safety approach to their own studies. In addition to the aforementioned tenets of this practice, cultural safety encourages researchers to become aware of their personal biases and dissuades them from imposing their values and beliefs onto those with whom they are conducting research (Giles et al., 2015; Ramsden, 2002). Cultural safety also permits scholars to analyze how their exercise of power may influence interactions with respect to their participants (Baker & Giles, 2012; Brascoupé & Waters, 2009; Giles et al., 2015; Ramsden, 2002). Therefore, it is clear that researchers should adopt these practices because it ensures that the participants engaging in their studies and programs are the ones who will

ultimately determine whether or not their findings and suggested interventions are relevant and/or needed for these communities (Brascoupé & Waters, 2009; Giles et al., 2015).

Researchers and practitioners working with Aboriginal peoples thus benefit from utilizing a culturally safe approach. For these professionals, it encourages them to examine the ways in which their cultural backgrounds influence their actions and behaviours, and the ways in which they interact with Aboriginal populations (Giles et al., 2015). Aboriginal peoples have greater self-determination and responsibility over studies, services, or programs that are culturally safe because their perspectives are taken seriously and their needs are met (Giles et al., 2015; Reading et al., 2011). Fortunately there have been studies that have addressed the development of cultural safety principles in health services for Aboriginal peoples (see Giles et al., 2015; Nursing Council of New Zealand, 2011); however, there is little known about culturally safe falls prevention programs for Aboriginal Elders in Canada. Interestingly, Reading and colleagues' (2011) study is the only one in Canada that focused on increasing cultural safety of falls prevention programs. It is important to note that their cultural safety recommendations were developed from discussions regarding (and with) First Nations Elders; nevertheless, these suggestions can be used to initiate conversations on how to establish culturally safe falls prevention programs for other groups of Elders, such as Inuit Elders.

To create culturally safe falls prevention programs for Elders, Reading et al. (2011) recommended that researchers and practitioners include community members' inputs and opinions. By incorporating Aboriginal peoples' voices in the development and implementation process, falls prevention professionals are more likely to create successful and sustainable programs for Aboriginal Elders (Reading et al., 2011). Another suggestion was to include more

traditional activities and culturally relevant practices into these programs; doing so could potentially elicit greater participation rates from Aboriginal Elders (Reading et al., 2011).

Although these recommendations can initiate the process of developing and implementing a culturally safe falls prevention program for Aboriginal Elders, it is important to note that these suggestions were created in partnership with First Nations Elders. The issue with this is that the recommended strategies for establishing a culturally safe falls prevention program may only be applicable and relevant to First Nations Elders; meaning that the ways in which Inuit Elders determine the cultural safety of their programs is missing from falls prevention literature. Therefore, I sought to address this gap in falls prevention research by working with Inuvialuit Elders.

Theoretical Framework

This research was informed by postcolonial theory. As a theoretical framework, postcolonial theory encourages scholars to better understand individuals' past, present, and lasting experiences with colonialism, while simultaneously exposing the cultural, political, and economic damage they experienced as a result of colonial legacies (Boehmer, 1995; Gandhi, 1998; Judd, 1996; McEwan, 2009; Scott, 2014).

Colonial discourses, values, and power have profound impacts on Aboriginal peoples (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). This is a significant issue because the dominant Eurocentric ideals of non-Aboriginal Canadians continue to frame the nation's legislation and policies towards education, employment, healthcare, language, and knowledge, which has resulted in Aboriginal cultures remaining absent from these areas of the government (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). It should be noted that the Canadian government has made some (albeit often incredibly flawed) attempts to recognize and respect

Aboriginal peoples' rights; however, little has been done to facilitate decolonization. According to theorists, decolonization is the long process of undoing colonialism (Crawford, 2002; Smith, 1999). It separates Aboriginal peoples' knowledge, traditional practices, and research processes from the colonizer's power and predominant Western discourses; it has Western policy makers, practitioners, researchers, etc. respect Aboriginal peoples' knowledge in order to better understand the concerns within their social world; and it has these professionals *work with* Aboriginal peoples to mutually develop potential, and appropriate, solutions (Crawford, 2002; Smith, 1999). Decolonization strategies therefore ensure Aboriginal peoples' knowledge is accepted, and provide them with the opportunity to exercise their power.

It is important to recognize that decolonization is a two-way street. While Aboriginal peoples may seek to rid their lives of some or all Eurocentric practices, non-Aboriginal peoples, too, have to change. As a result, decolonization involves bidirectional change (Battiste, 1998; Coleman et al., 2012). Importantly, however, it is impossible for decolonization to occur without Aboriginal peoples playing a leading role in this process (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). Therefore, Aboriginal peoples' leadership of decolonization processes ensures that Aboriginal peoples are able to address their worldviews and concerns through a lens that accurately represents their perspectives (Battiste, 1998; Coleman et al., 2012; Kelm, 2004; Smith, 1999). An additional decolonization strategy that could assist Aboriginal peoples in having their knowledge represented and used in current scholarly literature would be to have both Aboriginal and non-Aboriginal scholars acknowledge the "colonial shadow" that has been, and continues to be, cast on studies related to Aboriginal peoples (Battiste, 1998; Coleman et al., 2012; Kelm, 2004). By acknowledging this colonial shadow, Aboriginal peoples can provide direction for the steps should be taken in order to mitigate these effects. Decolonization

strategies are necessary because they enable Aboriginal peoples (with or without the assistance of non-Aboriginal peoples) to develop strategies that may help them recover and/or strengthen their cultures and languages, as well as make it possible for Aboriginal peoples to use their knowledge to overcome the disadvantages they currently face in Canadian society (Battiste, 1998; Coleman et al., 2012; Kelm, 2004).

Methodology

Participatory action research (PAR) is a methodology that enables "researchers [to] work in partnership with communities in a manner that leads to action for change" (Baum, MacDougall, & Smith, 2006, p. 854). PAR is used as a reflective process among scholars and their participants in order to better understand (and hopefully improve upon) the factors that significantly impact individuals' everyday lives (Baum et al., 2006). To facilitate this process and promote participation and action among participants, researchers must also advocate for those being researched to be actively involved in the study (i.e., participants should be considered research *partners,* and have the power to provide suggestions and make decisions throughout all stages of the research process) (Baum et al., 2006). By following the aforementioned tenets, researchers and participants can thus co-identify important issues, promote open dialogue and community participation, and bridge gaps in knowledge and practice between researchers and communities (Baum et al., 2006; Maguire, 1987; Wallerstein & Duran, 2010).

Similar to other methodologies, PAR also comes with a set of challenges. As it is heavily dependent on participation, researchers utilizing PAR need to include as many individuals of interest as possible in their study to ensure that a collective representation of the group's concerns is presented (Baum et al., 2006). However, if the majority of individuals cannot

participate in the research, or choose not to, researchers may have an exceedingly difficult time collecting the data necessary for their research. To address this challenge for my own research, I established a local advisory board. The board comprised of a group of stakeholders who live in Inuvik. The board was comprised of three individuals: Crystal MacPhail, a Regional Occupational Therapist for the Inuvik Regional Hospital's Rehabilitation Department; Dolores Harvey, the Elders Coordinator for the town's local friendship centre, Ingamo Hall; and Shannon O'Hara, the Inuit Research Advisor for the Inuvialuit Regional Corporation. The advisory board members not only helped me to recruit participants and better understand the inner-workings of their community, but they also provided me with great guidance to ensure that my research and the practices I used were the most appropriate for Inuvialuit Elders. The advisory board also supported the use of PAR for this research.

Another challenge of PAR focuses on the power dynamics present in research relationships (Baum et al., 2006). Researchers utilizing PAR need to have participants partake in the research, as well as ensure that participants are powerful, active agents throughout the process (e.g., have participants participate in the establishing research questions, collecting and analyzing data, etc.) (Baum et al., 2006). For my own research, I used two strategies to address this process. The first strategy I utilized was a self-reflective process. I recognized that my own cultural background [i.e., I am Euro-Canadian graduate student who grew up in Beeton, ON (a town 88km northwest of Toronto)] could strongly influence the research; thus, I reflected on my own beliefs through discussions with my supervisor, fellow graduate students, and research participants. This process enabled me to examine the potential impacts my biases had on my research. My second strategy was to have my participants and advisory board engage in my research as much as possible, and as much as they wanted. This resulted in participants and

advisory board members assisting me with recruitment, as well as participants partaking in the analysis of this research (i.e., reading over their own transcripts and helping to finalize the themes). These two strategies therefore helped me challenge potential power differentials in my research, and ensured that the participants were actively involved in the study.

From September 19th, 2016 to November 30th, 2016, I lived in Inuvik. Prior to living in the community, I received approval from the Research Ethics Board at the University of Ottawa, as well as a research licence from the Aurora Research Institute (which is responsible for issuing licenses for the NWT on behalf of the Government of the NWT). In the following section, I provide an explanation of how I recruited the participants for my research.

Sampling

I used different recruitment strategies for identifying potential participants, who fell into two categories: Inuvialuit Elders and local falls prevention programmers (LFPPs). For Elder Inuvialuit participants, the inclusion criterion for participants was being age 55 or older (Wilson, Rosenberg, Abonyi, & Lovelace, 2010). Due to the shortened life expectancy of Inuit (i.e., it is expected for the average Canadian male and female to live upwards of 79 years old and 83 years old, whereas Inuit male and female expectancies are only 64 years old and 73 years old respectively) (Statistics Canada, 2015b; Wilson et al., 2010), I followed other scholars who have identified Inuit Elders as being 55 years of age and older (see Collings, 2001; Gabel, Pace, & Ryan, 2016). I also selected this age criterion because older adults are at a greater risk of falling in comparison to the rest of the population and I wanted to include individuals who were at higher risk of experiencing falls. To identify Inuvialuit Elder participants, I employed snowball sampling (Cohen & Arieli, 2011). In total, I recruited 8 Inuvialuit Elders (4 males and 4 females, with ages ranging from 64 to 79 years old).

I used judgement sampling to recruit LFPP participants (Marshall, 1996). According to Marshall (1996), judgement sampling is when researchers select participants based on specific criteria because it is believed these individuals will provide information that will assist in answering their research questions. Thus, my specific inclusion criteria were that LFPP participants were knowledgeable in falls prevention literature and had training in falls prevention and/or certificates (e.g., Canadian Falls Prevention Curriculum). I also specified that LFPP study participants had to have worked in falls prevention for at least one year to ensure that they were familiar with the area. I recruited six LFPP participants (1 male and 5 females; the male participant self-identified as Pilipino-Canadian and the female participants self-identified as Euro-Canadian). LFPP participants included occupational therapists (2), long-term care workers (1), senior program coordinators (1), rehabilitation assistants (1), and community health representatives (1).

Methods

The advisory board members agreed that semi-structured interviews (Fontana & Frey, 2005) would be an appropriate research method for this project; however, to recruit participants for data collection, it was also agreed that I should engage with residents of the community. To that end, I volunteered with local Elders at the Inuvik Regional Hospital's Elders' Day Program and at the local Friendship Centre (i.e., a non-profit community centre and Aboriginal program/service delivery organization), Ingamo Hall. Whereas the Elders' Day Program provides daily (Monday to Friday, from 10AM to 3PM) activities and games for a select number of seniors in Inuvik (i.e., acceptance into the program is dependent on availability of space and their ability to cater to individuals' needs), Ingamo Hall runs various educational, recreational, social, and multicultural activities and events for all of the town's citizens. I volunteered as a

program activity aide (i.e., helped run activities for elderly participants) for the Elders' Day Program twice a week, and served as a friendly luncheon companion (i.e., ate and socialized with Elders) for Ingamo Hall once every other week.

I conducted semi-structured interviews to better understand Inuvialuit Elders' and LFPPs' definitions of what constitutes a fall, to determine what current falls prevention interventions reduce Inuvialuit Elders' falls rates, and to ascertain how these prevention programs can be co-created (with the research participants) to be culturally safe. Semi-structured interviews are interviews guided by pre-determined topics and open-ended questions that elicit discussions on the various influences present in participants' everyday lives (Fontana & Frey, 2005). Some examples of these questions included, "Do you think Inuvialuit Elders would benefit from a culturally safe falls prevention program?" and "For this kind of falls prevention program to be provided to you/Inuvialuit Elders, what do you believe should be done?"

I facilitated 12 semi-structured interviews (10 one-on-one interviews and two two-on-one interviews), for a total of 14 participants. I digitally recorded and transcribed all interviews verbatim. I returned the interview transcripts to the participants by mail or email for participant feedback; however, only one participant edited her transcript. To recognize the expert contributions and knowledge of the Inuvialuit Elders (Giles & Castleden, 2008), participants' names have been included with permission.

Analysis

To analyze the data, I used Braun and Clarke's (2006) six-step thematic analysis framework. This process was supported by Nvivo11, which enabled me to organize the interview transcripts. As required by Braun and Clarke (2006), my first step was to familiarize myself with the transcripts, and to record any ideas I had for potential themes to be used later in the analysis.

Second, I identified initial codes within my data and then attached these codes to my transcripts as way to organize the data. Some initial codes that I identified were “various falls definitions,” “traditional falls prevention interventions,” “non-traditional falls prevention interventions”, and “strategies for developing cultural safety”.

Next, the third phase required sorting my codes into potential themes (i.e., collective definitions of falls, falls prevention interventions and programs recommended based off of pre-existing curriculums, and steps to creating a culturally safe Inuvialuit falls prevention program). Fourth, I reviewed and refined my themes to ensure that they suited the initial context of my research. The fifth step was comprised of two stages: I travelled back to Inuvik from April 1st, 2017 to April 9th, 2017 to review the potential themes with the participants; and I then precisely named and defined the themes so that they reflected the broader themes within my data. For the final step, I established two themes: the recommended solutions for preventing Inuvialuit Elders’ falls and the recommended strategies for developing culturally safe falls prevention programs for Inuvialuit Elders.

Results

Based on my analysis and supported by feedback from my participants, I identified two main themes that related to my research objectives of understanding the nature of falls among Inuvialuit Elders in Inuvik, NWT, and determining if and how falls prevention programs can be adapted and made culturally safe for this population: a) the recommended solutions for Inuvialuit Elders’ falls included the assessment and modification of an Elder’s environment, participation in physical activity, and educating the Elder and his/her caretakers on falls prevention strategies; and b) the recommended strategies for developing culturally safe falls prevention programs for Inuvialuit Elders comprised of falls prevention researchers and practitioners establishing trust

and rapport within the community, including both Aboriginal and non-Aboriginal interventions in falls prevention programs, and training falls prevention professionals on cultural safety practices.

Recommended Falls Prevention Solutions

Discussions with both Inuvialuit Elders and LFPPs indicated that the current falls prevention solutions offered to the elderly residents of Inuvik, NWT are relatively similar to the components of the BEEEACH model. I therefore analyzed and framed the recommended solutions in relation to the BEEEACH model; and with the assistance of my participants, we determined which components of this model should be included in a falls prevention program for Inuvialuit Elders.

Environment (assessment and modification). Ten participants (1 male LFPP, 4 female LFPPs, 2 male Inuvialuit Elders, and 3 female Inuvialuit Elders) agreed that the assessment and modification of environmental hazards should be an integral component of any falls prevention programs tailored for Inuvialuit Elders. As one LFPP, Jenel, explained, many Elders in Inuvik, NWT, are at higher risk of experiencing fall-related injuries or fatalities because of the conditions of their indoor (e.g., overcrowding, trip hazards like throw rugs, ineffective and/or lack of assistive living devices, etc.) and outdoor environments (e.g., extremely low temperatures in the winter, relatively consistent snowfall, icy surfaces, etc.). To address these risk factors, the participants argued that environmental hazard assessment and modification interventions can also be used to reduce Inuvialuit Elders' fall and fall-related injury rates. The following are examples some of these participants provided:

> They most often fall when they stand up from the bed [*in Inuvik Regional Hospital's Long-Term Care Centre*]. We put floor mats. Mats in order to provide some sort of suspension when they fall, so they don't break their hip (Jenel, LFPP).
>
> You gotta have that rubber mat [in the bathtub] to protect you. Or I always put a towel under—just make sure you don't trip on it or anything. But that rubber mat is best. It'll keep you from falling. And always make sure you've got that handle—that safety handle [grab bar] (Jean, 80 years old, Inuvialuit Elder).
>
> [In the winter, have someone] clear their steps [of snow and ice] for them. Also provide Elders with kitty litter, just to sprinkle on their steps [to reduce their risk of slipping and falling] (Crystal N, LFPP).

(Physical) activity. Participants (3 female LFPPs and 1 male Inuvialuit Elder) also indicated that physical activity interventions should be included in falls prevention programs. Predominantly LFPP participants felt that programs that incorporated exercise and fitness had the greatest likelihood of reducing Inuvialuit Elders' overall falls risk. As Susan (LFPP) explained that an "exercise program that you can apply with any population [is good] because [a LFPP] can explain to them exactly what the exercise is for, what it is benefitting, and how it can help them [build strength and reduce their likelihood of experiencing a fall]".

Education (for Elders and caretakers). The last component that Inuvialuit Elder and LFPP participants considered a falls prevention program requirement was education. They (2 female LFPPs, 1 male Inuvialuit Elder, and 3 female Inuvialuit Elders) agreed that the purpose of education for fall prevention was to increase Elders' awareness about the importance of preventing a fall, to ensure that prevention is indeed possible, and to promote learning effective strategies to prevent falls, such as conducting personal safety checks of their surroundings and

being mindful of personal limitations. However, these participants also identified the need for caretakers (i.e., long-term care/homecare staff, family members responsible for the care of parents/grandparents, etc.) to be given this prevention education as well. As Chelsey (LFPP) explained: “Sometimes the homecare staff don’t identify that the [elderly] person could benefit from interventions like a home assessment. They need to be taught these [falls prevention] techniques.” Juanita (LFPP) further highlighted this issue and stated: “I think family awareness is a big one…I think it comes down to education and educating families [on falls prevention].”

Recommended Strategies for Developing a Culturally Safe Falls Prevention Program

After developing and considering these population-specific recommendations, the participants of this study also made it evident that these prevention programs can be made culturally safe for Inuvialuit Elders as well. The following are the recommended strategies that participants suggested for the development of a culturally safe falls prevention program for Inuvialuit Elders.

Establishing trust and rapport within the community. The majority of the participants (1 male LFPP, 4 female LFPPs, 4 male Inuvialuit Elders, and 4 female Inuvialuit Elders) agreed that establishing trust and rapport with Inuvik’s residents was integral to developing a culturally safe falls prevention program. Both LFPPs and Inuvialuit Elders indicated that falls prevention professionals who engage in community capacity building and promote open dialogue are more likely to gain a better understanding of Inuvialuit Elders’ falls risk and rates. Jenel (LFPP) explained:

> If we wanted to make a culturally safe falls prevention program, I feel like a big element is trust. You need to develop that rapport with them…you [should] also include locals [in

the discussion and development of a culturally safe falls prevention program]. You can have them put their input on what they think would be great for them.

Participants also felt that prevention researchers and practitioners who make an effort to build relationships with Inuvik's Inuvialuit Elders also gives the community's older adults opportunities to actively develop, implement, and refine their falls prevention program. The LFPPs and Inuvialuit Elders further indicated that by providing the community's Inuvialuit Elders with chances to openly share their suggestions and opinions could result in Elders' developing a sense of ownership in reducing their rates of falling and fall-related injuries. As reiterated by local Inuvialuit Elder, Albert (74 years old) explained: "Participating in the decision-making [regarding the development of a culturally safe falls prevention program]…it is so important, that participation."

Including both Aboriginal and non-Aboriginal interventions in falls prevention programs. Participants (1 male LFPP, 5 female LFPPs, 4 male Inuvialuit Elders, and 3 female Inuvialuit Elders) widely agreed that the incorporation of Aboriginal and non-Aboriginal interventions can assist falls prevention researchers and practitioners in making their programs more culturally safe for Inuvialuit Elders. Many of the participants voiced how modern, non-Aboriginal falls prevention interventions (e.g., generic muscular endurance and cardiovascular exercise programs, as well as mobility aides like metal canes, walkers, and wheelchairs) have reduced Inuvialuit Elders' experiences of falling and maintained their independence; however, both LFPPs and Inuvialuit Elders also indicated the benefits of traditional, Aboriginal prevention interventions. As Crystal N (LFPP) noted, including elements of Inuvialuit culture, such as traditional mobility aides (e.g., walking sticks) and traditional cultural activities (e.g., going out on the land, trapping, "jiggling"/fishing), into falls prevention programs "can only benefit them

that much more." Chelsey (LFPP) agreed and also stated, "there would be a better uptake and a more wide-reaching effect for Inuvialuit Elders [if falls prevention programs had culturally relevant interventions]." The following statement from Albert (74 years old, Inuvialuit Elder) succinctly summarized the participants' opinions towards the desire to include non-Aboriginal and Aboriginal interventions in falls prevention programs: "I think that anything helps, you know?"

Training others on cultural safety practices. The remaining recommendation was the need for cultural safety training among falls prevention researchers, practitioners, and programmers. Due to their lack of cultural safety education and understanding of Inuvialuit culture, participants (2 female LFPPs, 2 male Inuvialuit Elders, and 1 female Inuvialuit Elder) indicated that falls prevention researchers, practitioners, programmers, etc. have done a disservice to the Inuvialuit falls prevention program recipients. Susan (LFPP) explained:

> I don't think we're doing enough to educate people about what the culture is, what it means to be a part of that culture, and how we can effectively work with it. I think people think they're doing it, but I don't see it…I don't think [falls prevention programmers] have bought into cultural sensitivity [and safety] as much as they could have or could.

Juanita (LFPP) agreed, stating "implementing [Inuvialuit] culture into [falls prevention programs] is going to get their attention and participation way better than if we're putting our culture onto them." Training was therefore deemed necessary by the participants as a means to prevent falls prevention professionals from imposing their values and beliefs onto Inuvialuit Elders participating in their programs.

Discussion

In this study, LFPPs and Inuvialuit Elders identified BEEEACH model-related falls prevention solutions that reduce Inuvialuit Elders' risk of falling and strategies that can be used to make current falls prevention programs in Inuvik more culturally safe for Inuvialuit Elders. This study makes an important contribution to better understanding how falls prevention researchers, practitioners, and programmers can develop and implement a more culturally safe program, which would enable falls prevention programs to be more respectful and inclusive. Below, I discuss the recommended solutions and strategies identified by the participants and the ways in which these findings support or challenge existing literature. I also identify potential steps that can be taken to improve the cultural safety of falls prevention programs for Inuvialuit Elders and areas of future research.

Not all Components of the BEEEACH Model are Relevant for Falls Prevention Programs in Inuvik

Environmental hazards applied to Inuvialuit Elders in this study in the context of their experiences with falls and fall-related injuries. Both LFPPs and Inuvialuit Elders argued that the current conditions of Inuvialuit Elders' indoor and outdoor environments increased their fall risk and rates. The participants also indicated that assessments and modifications of these environments (conducted by LFPPs) could be effective strategies for reducing Inuvialuit Elders' likelihood of injury. These findings support research related to the environmental category of the BEEEACH model, which implies that both indoor and outdoor fall risk contributors need to be assessed—and, if need be, modified—in order to reduce seniors' risk of experiencing fall-related injuries or fatalities (Canadian Mortgage and Housing, 2011; Gallagher & Brunt, 1996; Gallagher & Scott, 1997; Scott, 2012; Simpson, Lamb, Roberts, Gardner, & Evans, 2004).

In addition to the assessment and modification of Inuvialuit Elders' indoor and outdoor environments, LFPPs and Inuvialuit Elders indicated that including physical activity in falls prevention programs can also serve as an effective strategy in reducing falls and fall-related injuries. The participants (3 female LFPPs and 1 male Inuvialuit Elder), however, emphasized that falls prevention programs should specifically include exercise and fitness components. Interestingly, this finding supports evidence related to the BEEEACH model as well, which stresses that exercise and fitness is beneficial for community-dwelling seniors and can significantly reduce their risk of falling (Gillespie et al., 2005; Scott, 2012; Sherrington et al., 2008).

Lastly, both LFPPs and Inuvialuit Elders indicated that education was another effective strategy for decreasing the likelihood of Inuvialuit Elders experiencing a fall. They (3 female LFPPs, 1 male Inuvialuit Elder, and 3 female Inuvialuit Elders) argued that educating those at risk of falling (i.e., Inuvialuit Elders), as well as those who assist Elders in their day-to-day lives (i.e., long-term care/homecare staff, family members responsible for the care of parents or grandparents, etc.) should be a key component of Inuvialuit Elders' falls prevention programs. This finding is parallel with research that supports the BEEEACH model's education recommendations; that is, providing falls prevention education to seniors and caretakers is considered a key component of falls prevention programs (Robertson & Gillespie, 2013; Scott, 2012; Tzeng & Yin, 2014; Williams & Hadler, 2015).

It is evident that some of the BEEEACH model recommendations for mitigating falls (i.e., assessments and modifications of environments, inclusion of physical activity, and falls prevention education for all) were similar to the participants' recommendations. This was particularly interesting because the participants of this study—to a certain extent—subscribed to

the BEEEACH model; a falls prevention model that was created in relation to the experiences of non-Aboriginal seniors alone. Although the participants indicated that only specific components of the BEEEACH model were relevant to falls prevention for Inuvialuit Elders (i.e., the need for falls prevention researchers and practitioners to address the environmental, physical, and educational categories of the model has been deemed appropriate for Inuvialuit Elders), the selected categories of the BEEEACH model may be further evidence of falls prevention programs reinforcing colonial, non-Aboriginal falls prevention knowledge and practices. Arguably, the entire BEEEACH model (and its respective recommendations) enforces the assumption that the model's recommended falls prevention solutions work for all Canadian seniors. The BEEEACH model also does not provide opportunities for non-dominant populations, such as Inuvialuit Elders, to refer to their traditional knowledge regarding falls and falls prevention. Thus, by strictly abiding by the model, current and future LFPPs working with Inuvialuit Elders are at risk of upholding the colonial discourses on what is considered a fall-related hazard and what falls prevention practices should be used.

Since both LFPPs and Inuvialuit Elders agreed that some components of the BEEEACH model should be included in Inuvialuit Elders' falls prevention programs, I am *not* suggesting that future LFPPs should completely avoid referring to the model for falls prevention recommendations. Instead, I argue that these LFPPs need to consult Inuvialuit Elders prior to determining which strategies would be most effective in reducing the Elders' likelihood of experiencing a fall. Doing so will provide Inuvialuit Elders with the opportunity to exercise their power in determining which components of the BEEEACH model would actually assist them in reducing their likelihood of falling, as well as minimize the chances of LFPPs implementing a

falls prevention program based off of stereotypical assumptions and using a "checklist approach" to culture (Giles et al., 2015; NCNZ, 2011).

Creating a Culturally Safe Falls Prevention Program for Inuvialuit Elders

Although some of the BEEEACH model's corresponding components and recommendations were suggested as elements to include in falls prevention programs for Inuvialuit Elders, the LFPPs and Inuvialuit Elders of this study also indicated that LFPPs should use a culturally safe approach to their interventions and programs. To develop a culturally safe falls prevention program tailored to Inuvialuit Elders, the participants recommended that the following strategies be included: establishing trust and rapport within the community, including both Aboriginal and non-Aboriginal interventions in these programs, and training others on cultural safety practices.

Regarding the first recommended strategy, the participants (1 male LFPP, 4 female LFPPs, 4 male Inuvialuit Elders, and 4 female Inuvialuit Elders) felt that community members would be more willing to engage in falls prevention discussions and program planning if LFPPs facilitated community capacity building with Inuvik's Inuvialuit peoples. In this vein, the participants suggested that LFPPs should not only include locals' input in relation to falls prevention services, but also provide the target population (i.e., Inuvialuit Elders) the opportunity to actively develop, implement, and refine their own falls prevention programs. Recent studies support these findings, and highlight that researchers and practitioners who promote residents' ability to develop, implement, and sustain their own solutions actually facilitate a culturally safe approach by furthering participants' self-determination and improving their opportunity to exercise control in determining the cultural safety of programs that influence their health and well-being (Giles et al., 2015; Reading et al., 2011).

As a second recommended strategy, the participants (1 male LFPP, 5 female LFPPs, 4 male Inuvialuit Elders, and 3 female Inuvialuit Elders) indicated that the current falls prevention programs offered in Inuvik could become more culturally safe by including both Aboriginal and non-Aboriginal falls prevention interventions. Indeed, LFPPs and Inuvialuit Elders agreed that non-Aboriginal falls prevention interventions were beneficial to and appropriate for Inuvialuit Elders; however, incorporating traditional activities (e.g., going out on the land, hunting, trapping, "jiggling"/fishing, etc.) and culturally relevant practices (e.g., using a walking stick as a mobility assistive device, etc.) into falls prevention programs could help to ensure that their specific needs are met and that their knowledge becomes better represented in Canadian falls prevention research and practice (Reading et al., 2011; Scott, 2012; Smye & Browne, 2002).

The last recommended strategy for developing a culturally safe falls prevention program for Inuvialuit Elders requires that current and future falls prevention researchers, practitioners, and programmers receive cultural safety training. The participants (2 female LFPPs, 2 male Inuvialuit Elders, and 1 female Inuvialuit Elder) argued that LFPPs in Inuvik are doing very little to better understand Inuvialuit culture, which has subsequently resulted in a disconnect between these researchers/practitioners/programmers and Inuvialuit Elders. In particular, the LFPPs and Inuvialuit Elders worried that Inuvik's LFPPs are failing to learn more about what it means to be Inuvialuit, and how Inuvialuit peoples' knowledge and traditional practices can be effective falls prevention interventions. By excluding Inuvialuit culture and their knowledge, Inuvik's LFPPs thus may be at risk of upholding the normalization of whiteness (Brascoupé & Waters, 2009; Gerlach, 2012; Giles et al., 2015) in falls prevention research and practice (i.e., using falls prevention interventions and programs that reflect white Canadians' preferences and privileges instead of Inuvialuit peoples' preferences).

The participants also reaffirmed the need for cultural safety training to prevent LFPPs from imposing their cultural values, beliefs, and biases on Inuvialuit Elders participating in their falls prevention programs. The LFPPs' and Inuvialuit Elders' concerns support recent studies on cultural safety, which posit that a culturally safe approach to research and practice encourages program providers to be reflexive of their cultural background, as well as better understand whose knowledge is privileged in these areas of interest (Giles et al., 2015; Ramsden, 2002). Inuvik's LFPPs should therefore undergo cultural safety training in order to learn how their cultural backgrounds are influencing their falls prevention practices and programs, and to determine if they are asserting and upholding power differentials between themselves and their participants (i.e., Inuvialuit Elders).

After considering the participants' concerns and recommendations, my findings suggest that LFPPs should provide Inuvialuit Elders with personalized falls prevention program options. By ensuring that the program is tailored to the Elder's capacity, is reflective of their cultural background and preferences, is accessible, and includes interventions and activities they find relevant and enjoy, LFPPs may increase Inuvialuit Elders' participation rates in falls prevention programs and, as a result, decrease their likelihood of experiencing falls and fall-related injuries or fatalities.

Conclusion

The falls prevention programs presently available to Inuvialuit Elders in Inuvik reaffirm colonial practices and support white Canadians' ideas of falls prevention, making this area of injury prevention a potential site of colonization. Researchers and practitioners thus need to initiate the long process of undoing colonialism by facilitating a culturally safe approach to falls prevention programs. My findings suggest that Inuvik's LFPPs should encourage Inuvialuit

Elders' self-determination and ability to exercise control throughout the development and implementation of their falls prevention interventions and programs, which can help to ensure Inuvialuit peoples' histories, worldviews, and knowledge are respected and accepted in falls prevention research and practice. Current and future LFPPs should take a culturally safe approach to their practices to better understand Inuvialuit Elders' concerns within their social world (a facet of decolonization), which can aide these professionals create falls prevention programs that are applicable and relevant to this population.

A culturally safe falls prevention program for Inuvialuit Elders can promote the decolonization of this field of injury prevention; however, there are some important limitations to this study. Only 6 LFPPs and 8 Inuvialuit Elders participated in this study, meaning that this research is in no way representative of all LFPPs and Inuvialuit Elders in Inuvik. Nevertheless, it makes an important contribution to falls prevention research and practice by providing an opportunity for these participants to have a voice on health disparities, such as injury, that regularly affect them.

Future studies should consider separately exploring falls prevention programs tailored to First Nations, Métis, Inuit, and other populations Elders to determine how these programs can be made more culturally safe, and to prevent generalizing findings among Aboriginal Elders.

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Chapter 4: Conclusions

Throughout my Master's of Arts research, I was fortunate to learn about local falls prevention programmers' (LFPPs) and Inuvialuit Elders' understandings of fall risk factors and culturally safe falls prevention programs for Inuvialuit Elders in Inuvik, Northwest Territories (NWT). Past research regarding Canadian Aboriginal Elders' falls risk have depicted Elders as having a higher likelihood of experiencing fall-related injuries and fatalities in comparison to non-Aboriginal seniors (George, Jin, Brussoni, & Lalonde, 2015; Public Health Agency of Canada [PHAC], 2016; Reading et al., 2011; Somogyi, Barker, MacLean, & Grischkan, 2015), making the need for more falls prevention research regarding Aboriginal Elders even greater. This is especially true for Inuit Elders, as information regarding factors that specifically contribute to their falls, as well as how current falls prevention programs can be co-created with Inuit Elders to be culturally safe, is missing from falls prevention literature. By speaking with the LFPPs and Inuvialuit Elders throughout my research, I was able to meet two objectives: i) to better understand the social determinants of health [SDH] that they believe increase, decrease, and have no influence on Inuvialuit Elders' falls rates; and ii) determine (with the participants) what strategies should be considered and used to develop and implement culturally safe falls prevention programs for Inuvialuit Elders in Inuvik. Thus, in this final section of my thesis, I discuss the gaps in knowledge that my research addresses, the implications of my research, the limitations of my research, recommendations for future research regarding Aboriginal Elders' engagement with falls and falls prevention programs, and my final thoughts concerning the contributions of my research.

Addressing Gaps in Knowledge

Considering the depth and expanse of falls prevention research in Canada (see Canadian Patient Safety Institute, 2017; Cadario & Scott, 2010; Feldman & Chaudhury, 2008; Gillespie et

al., 2005; Gillespie et al., 2012; Herman, Gallagher, & Scott, 2006; Hill, Pinto, Nathens, & Fowler, 2014; Markle-Reid et al., 2015; Parachute, 2015; Registered Nurses Association of Ontario [RNAO], 2005; Scott, 2012), it is surprising how little literature there is on Inuit Elders' fall rates, fall-related injuries and fatalities, and falls prevention programs. The only health and fall-related data available on Inuit Elders in Canada emphasize their exceptionally low life expectancy in comparison to non-Inuit seniors (PHAC, 2016), and provide very little information pertaining to fall-related injury and fatality rates among Inuit peoples (Bjerregaard, Young, Dewailly, & Ebbson, 2004; Somogyi et al., 2015). Considering the overrepresentation of Inuit peoples' poor outcomes on almost every health measure, including injury (Bjerregaard et al., 2004; PHAC, 2016), it is thus reasonable to assert that Inuit Elders are likely over-represented in fall-related injuries and are in need of falls prevention programs. In addition to Inuit Elders' already lacking falls prevention information and services, there is also a significant need for research that identifies and examines the falls risk contributors specific to Inuit Elders, the cultural safety of falls prevention programs for this population, and how these programs can be used to promote Inuit Elders' self-determination and decolonization.

In an effort to better understand Inuit Elders' overall experiences with falls and injury prevention, I conduct exploratory falls prevention research with Inuvialuit (Inuit) Elders in Inuvik, NWT. As previously highlighted, the two studies presented in my thesis examine the SDH that affect the likelihood of Inuvialuit Elders experiencing a fall, and how current falls prevention programs in Inuvik can be co-created with the participants (i.e., LFPPs and Inuvialuit Elders) to be culturally safe. The data collected with LFPPs and Inuvialuit Elders thus provide significant contributions to the field of injury and falls prevention within Canada.

My first study sought to understand which SDH stakeholders (i.e., LFPPs and Inuvialuit Elders) believe most affect the likelihood of Inuvialuit Elders' falls, which makes a unique contribution to the scholarly literature on injury prevention. I identified three main themes: the SDH that participants believed increase the likelihood of falls (personal health status and conditions, personal health practices and coping skills, physical environments, social support networks, and access to health services); the SDH that participants believed decrease the likelihood of falls (health practices and coping skills, and access to health services); and the SDH that participants believed have no influence on falls (culture). These themes highlighted how there are factors that participants believed increased, decreased, and had no effect on Inuvialuit Elders' likelihood of experiencing a fall; however, the themes further illustrated how Inuvialuit Elders' fall risk factors continue to be influenced by colonialism. The results from this study challenge current falls prevention programs, and indicate that falls prevention researchers and practitioners should carefully consider these determinants and their broader implications when developing falls prevention programs and interventions; meaning that many of these falls risk contributors reveal the vast disparities that continue to negatively impact Aboriginal peoples such as Inuvialuit Elders. Thus, researchers and practitioners need to use falls prevention strategies that will reduce their likelihood of experiencing a fall, but also recognize their experiences with falls is yet another inequality affecting their well-being that needs to be addressed promptly in Canadian falls prevention.

While paper two builds on paper one, it also makes a unique contribution to the scholarly literature on cultural safety and falls prevention programs by building on Reading and colleagues' (2011) research. I addressed two objectives: identifying the falls prevention recommendations are offered by LFPPs to reduce fall rates among Inuvialuit Elders, and

understanding how falls prevention programs for Inuvialuit Elders can be co-created with participants to be culturally safe. Regarding the first research objective, the LFPPs and Inuvialuit Elders recommended the continued use of environment assessments and modifications, physical activity, and education for Elders and caretakers, which are components of the standard falls prevention model (i.e., the BEEEACH model), in pre-existing falls prevention programs in Inuvik. As for the second research objective, culturally safe falls prevention programs for Inuvialuit Elders must include the following strategies: establish trust and rapport within the community; include both Aboriginal and non-Aboriginal interventions in falls prevention programs; and train others on cultural safety practices. The results from this study thus challenge current falls prevention programs by highlighting the fact that not all components of the BEEEACH model are relevant for falls prevention program participants in Inuvik, and that there is a need to adapt these programs through the use of a culturally safe approach. Falls prevention researchers and practitioners should therefore carefully consider how they develop and implement falls prevention programs for (and with) Inuvialuit Elders.

Taken together, both papers emphasized that Canadian falls prevention practices and research marginalizes Inuvialuit Elders. By having the participants highlight the fall risk contributors that influenced Inuvialuit Elders' likelihood of experiencing a fall, and by sharing their insights in relation to the development and implementation of a culturally safe falls prevention programs, the studies confirmed that current falls prevention research, practices, and programs are not adequately reflective of Inuvialuit Elders' lived experiences. Rather than facilitating falls prevention programs informed by Inuvialuit Elders' culture and knowledge, the interventions and programs offered to these Elders focuses on the preferences and privileges of non-Inuvialuit, southern-Canadian dwelling seniors. The implications of my research are that

LFPPs in Inuvik, as well as future falls prevention researchers and practitioners who plan to work with Aboriginal Elders, need to adopt a culturally safe approach to their programs in order to determine (with their clients') the best way to reduce their clients' falls risk, rates, and injuries. In short, falls prevention researchers and practitioners must not assume that falls by Inuvialuit Elders demonstrate the need for more programs; rather, they should instead understand that the need may actually be for programs with content that is specific to the population(s) with which they are working.

Limitations

Although this research makes significant contributions to falls prevention literature, it is also accompanied by some limitations. One of the major limitations of my research was a result of time and resource constraints. I was fortunate enough to receive funding from the Ontario Graduate Scholarship (OGS), the Northern Scientific Training Program (NSTP), and the University of Ottawa to help offset the cost of conducting research in the North. Travel expenses, accommodations, participant honorariums, and much more were covered by the scholarships and additional funding; however, due to the cost of living and high prices prevalent in northern Canada, I was only able to afford to stay in Inuvik for two and a half months. This timeframe was rather limiting for my community-based research, as I only had two and a half months to introduce myself to the community, establish a local advisory board (comprised of stakeholders from Inuvik), develop rapport with the town's residents (through volunteering at the local community services), recruit participants (i.e., LFPPs and Inuvialuit Elders), and conduct as many semi-structured interviews for my study as possible. While I believe I conducted sound community-based research in Inuvik, as well as a sufficient number of interviews to address my research questions, I do recommend that future academics who are planning to conduct

community-based research in Aboriginal communities acquire funding that grants them the opportunity to stay in the field for a longer period of time. Extending the length of the research project will give researchers more opportunities and time to develop trust and rapport with community members, as well as provide Aboriginal peoples with a more positive experience with these scholars [i.e., Aboriginal peoples' past experiences with non-Aboriginal researchers have also been predominantly negative as a result of being frequently solicited to participate in exploitative research, and receiving little to no feedback from the researchers after partaking in their studies (Hodge, Weinmann, & Roubideaux, 2000)]. Further, it will enable researchers to have the time required to collect information needed to more adequately address their research objectives.

Another limitation of my research was that there was not an equal representation of Inuvialuit Elder participants from the Inuvialuit Settlement Region (ISR). To provide some context, the ISR is located in Canada's western Arctic. There are also six main communities in the ISR: Aklavik, Inuvik, Paulatuk, Sachs Harbour, Tuktoyaktuk, and Uluhaktok (Inuvialuit Regional Corporation [IRC], 2017). Within these communities, it is estimated that 4,400 people identify as Inuvialuit, meaning that approximately 830 Inuvialuit Elders reside in the ISR (Statistics Canada, 2013). Only Inuvialuit Elders from Inuvik participated in the study. As a result, the experiences of falling and knowledge of falls prevention from Inuvialuit Elders of Inuvik are based on these few participants. To be clear, there was no intention of generalizing the findings, yet it would have been beneficial to have more Elders from the community to participate in the study in order to provide a better understanding of falls prevention in Inuvik. Additionally, information pertaining to falls prevention from Elders of the other ISR communities remains unknown. It is also important to recognize that the eight Inuvialuit Elders

from Inuvik who participated in this study provided unique perspectives on falls prevention that stemmed from their own experiences of falling and fall-related injuries; however, to ensure a better understanding of Inuvialuit Elders' falls risk contributors, and to provide these Elders with the opportunity to self-determine the development and implementation of their falls prevention program, future research needs to be conducted with Aklavik's, Paulatuk's, Sachs Harbour's, Tuktoyaktuk's, and Uluhaktok's Inuvialuit Elders.

Despite having hired an interpreter, an additional limitation to my research was the fact that all semi-structured interviews were conducted in English rather than one of the Inuvialuit dialects. It is possible that Inuvialuit peoples have a specific lexicon they use to explain and describe their experiences with fall and fall-related injuries that I was unable to capture. It however is important to note that language is also a sensitive topic among Inuvialuit Elders. All the Inuvialuit Elders who participated in the research attended residential school and, as a result, not all of the participants are able to speak in Inuvialuktun. Indeed, the participants unable to speak their mother-language were due in large part because of the local residential school enforcing English upon them. Thus, while I strongly encourage future researchers working with Inuvialuit Elders to offer and, if possible, use an interpreter in their interviews, it is also important to be aware that a vast number of Elders may be more comfortable speaking in English as a result of losing their language.

The last significant limitation of my research is that I am not an Aboriginal researcher. When approaching this study, I considered myself an outsider to this population. Although I was educating myself on the Inuvialuit people and their culture prior to initiating my research, I was also acutely aware that I did not have any experience working with Aboriginal populations. Thus, I felt it was important that I first reflected on my own beliefs and values before interacting

with any Inuvialuit elderly participant. This reflexive process included frequent discussions with my supervisor and fellow graduate students, which helped me examine the potential impacts my cultural background (i.e., I identify as a Eurocanadian, heterosexual female student researcher from a Canadian university) may have had on my research.

After identifying the impact that my positionality might have on my research, I did not immediately begin my research; instead, I became a volunteer in the community. I volunteered with local Elders at the Inuvik Regional Hospital's Elders' Day Program and at the local Friendship Centre (i.e., a non-profit community centre and Aboriginal program/service delivery organization), Ingamo Hall. At these community services, I spoke to Inuvialuit Elders and explained that it was my hope to work with them to better understand their experiences of falling and their knowledge regarding falls prevention programs, yet I also volunteered at these services in order to establish trust and rapport with Inuvik's residents. Volunteering thus gave me the opportunity to overcome my position as a community outsider – at least to some degree, and to become better acquainted with Inuvialuit Elders.

The last strategy I used to overcome my position as a community outsider was that I had the participants and the advisory board members engage in the research as much as possible, and as much as they wanted. I believe that having the participants—especially the Inuvialuit Elders—and the advisory board members heavily involved throughout the research (e.g., assisting with recruitment, partaking in the data analysis, etc.) gave these individuals the opportunity to make important and culturally relevant contributions regarding Inuvialuit Elders' falls prevention. Also including Inuvialuit peoples' practices, knowledge, and voices throughout my study was encouraging because it confirmed that research on this topic was indeed wanted. Lastly, I felt that including participants throughout the research deepened the trust between the Inuvialuit

Elders and me. Therefore, I recommend that future non-Aboriginal falls prevention researchers who plan on working with Inuvialuit Elders (or other Aboriginal communities, for that matter) consider using similar strategies.

Future Research

Despite the highlighted limitations of this research, I believe that my studies present opportunities for future researchers, practitioners, and policy makers to expand on older Aboriginal peoples' falls prevention. Below, I discuss and suggest various research, practice, and policy avenues for these falls prevention professionals to pursue.

Although falls prevention research in Canada continues to grow, more falls prevention research must be conducted with Aboriginal populations in Canada. Aboriginal Elders' experiences with falls and fall-related injuries, as well as their perspectives on interventions and programs, are likely going to vary between different communities. I thus recommend that falls prevention researchers work with a variety of groups of Aboriginal Elders to establish falls prevention knowledge representative of these populations. Initiating these studies can provide future researchers with the information needed to manage and reduce specific Aboriginal Elders' fall rates, as well as provide them with a better understanding of how falls prevention programs can play a part in reducing health disparities between Aboriginal Elders and non-Aboriginal seniors. Such research could also move current falls prevention literature and knowledge away from "colonial shadows" that uphold ideas of all Aboriginal Elders being the same and sharing the same experiences of fall hazards, injuries, and fatalities. Also, given that there is limited falls prevention research that has been conducted with Aboriginals Elders, directing studies with various Aboriginal communities could assist researchers in better understanding the strategies needed to make current falls prevention programs more culturally safe. Thus, there are many

areas that need to be explored in future research concerning Aboriginal Elders and falls prevention.

There are a few recommendations for falls prevention practice that I believe would enable falls researchers and programmers to better meet the needs of Aboriginal Elders in Canada. Currently, Aboriginal peoples' experiences, perspectives, and worldviews do not inform falls prevention curriculums [e.g., the Canadian Falls Prevention Curriculum (Scott et al., 2007)]. This is a significant issue because future practitioners and programmers are not being educated on fall risk factors specific to Aboriginal populations, and are lacking training on how to respectfully work with members of these communities. The training offered to falls prevention practitioners via these curricula need to be modified; however, I recommend that programmers have Aboriginal peoples lead this process. Having Aboriginal peoples share their knowledge of falls and falls prevention, as well as educating practitioners on which strategies and interventions are most appropriate for their communities, will result in programmers who are better trained for facilitating falls prevention programs for Aboriginal Elders.

Additionally, I argue that there also needs to be more opportunities for community-led falls prevention programs. Community members, especially Aboriginal Elders, have great insight into what falls prevention interventions and strategies are going to work best for reducing Elders' fall risk and rates. Practitioners and programmers are therefore encouraged to include these individuals in the development and implementation of falls prevention programs.

Lastly, policies regarding falls prevention can also be expanded. As current falls prevention policies have overlooked Aboriginal peoples' experiences with falls, fall-related injuries, and falls prevention programs (i.e., these policies were created in consideration of only non-Aboriginal peoples' experiences), policy-makers need to make more of an effort in

considering Aboriginal Elders' roles in mitigating their experiences of fall-related injury. Thus, I suggest that policy-makers work with Aboriginal peoples to ensure that pre-existing and future national, provincial/territorial, municipal, and institutional falls prevention policies [see examples, such as Accreditation Canada's Required Organizational Practices (2016); Government of Alberta's Continuing Care Strategy (2017); Government of British Columbia's Senior Healthy Living Framework (2008); Government of Manitoba's Provincial Injury Prevention Strategy (2006); Government of New Brunswick's Aging Strategy (2017); Government of Newfoundland and Labrador's Provincial Healthy Aging Policy Framework (2007); Government of Nova Scotia's Strategy for Positive Aging (2005); Government of Québec's Aging and Living Together Policy (2011); and Toronto Falls Best Practice in Long-Term Care Working Group's Policy and Procedures (2006)] are reflective of their communities. I also recommend that policy makers encourage Aboriginal Elders to participate in fall-related policy discussions, as this will ensure that the Elders have the power to modify and develop policies directed towards reducing their falls risk and rates.

Concluding Thoughts

This thesis demonstrates the need for more research with Inuvialuit (Inuit) Elders concerning their falls prevention practices, particularly concerning the ways in which both researchers and programs can address Inuvialuit peoples' unique social determinants of health and become more culturally safe. If we are to continue to focus on achieving health equity for all groups in Canada, researchers and practitioners need to consider all sites of colonization, including falls prevention, and focus on how they can be turned into sites that provide Inuvialuit Elders with the opportunity to exercise power in health services and destabilize colonial practices. I therefore hope that this research will be beneficial to current and future researchers,

practitioners, and policy makers by demonstrating how community-based approaches to falls prevention research and practice can begin the process of determining the cultural safety of a program, and by demonstrating the insights that Inuvialuit Elders can provide with regard to improving their own health.

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Contributions

Julia Frigault developed, designed, and undertook this thesis, its theorization, analysis, and writing. Dr. Audrey R. Giles supported all aspects of the dissertation's development, theorization and analysis, and provided assistance and input into writing and reviewing the final product. Both papers will be published with Frigault as first author and Giles as the second.

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Ethics Approval Notice

Health Sciences and Science REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

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Audrey	Giles	Health Sciences / Human Kinetics	Supervisor
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This is to confirm that the University of Ottawa Research Ethics Board identified above, which operates in accordance with the Tri-Council Policy Statement (2010) and other applicable laws and regulations in Ontario, has examined and approved the ethics application for the above named research project. Ethics approval is valid for the period indicated above and subject to the conditions listed in the section entitled "Special Conditions / Comments".

During the course of the project, the protocol may not be modified without prior written approval from the REB except when necessary to remove participants from immediate endangerment or when the modification(s) pertain to only administrative or logistical components of the project (e.g., change of telephone number). Investigators must also promptly alert the REB of any changes which increase the risk to participant(s), any changes which considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project and safety of the participant(s). Modifications to the project, including consent and recruitment documentation, should be submitted to the Ethics Office for approval using the "Modification to research project" form available at: http://www.research.uottawa.ca/ethics/forms.html

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If you have any questions, please do not hesitate to contact the Ethics Office at extension 5387 or by e-mail at: ethics@uOttawa.ca.