

Examining and Addressing Men's Boating Safety Practices in Inuvik, Northwest Territories

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THESIS

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Abstract

Injuries are one of the leading causes of death for individuals in Canada. Most injuries are predictable and preventable events that may be reduced by health promotion and injury prevention strategies. In particular, boating fatalities are a leading cause of injury death for men, particularly Aboriginal men, in northern Canada. Despite decades of water safety campaigns, Aboriginal men remain overrepresented in boating fatality statistics. Elevated rates of boating fatalities for Aboriginal men in northern Canada indicate that current water safety messages and initiatives may not be reaching those most vulnerable to boating incidents. My thesis, which is written in the publishable paper format and is comprised of two papers, investigates Aboriginal men's boating incidents in Inuvik, Northwest Territories, Canada. In paper one, I use a community-based participatory research methodology informed by postcolonial feminist theory to investigate the risk factors that Aboriginal male residents identified as contributing to boating incidents in Inuvik, Northwest Territories. Together, we found that sex and gender, age, place, and lack of boating safety education are the most prominent risk factors for boating incidents. In paper two, I argue that community members are key holders of local knowledge and their expertise should thus be drawn upon by academic researchers and health programmers for the co-creation of injury prevention programs. In it, I provide an overview of the process that led to the co-creation of a boating education poster campaign in Inuvik. Together, the two papers in this thesis demonstrate that community-based strategies should be employed to address health inequities in boating incidents faced by Aboriginal men in the Northwest Territories.

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Chapter One: Introduction

Water safety and injury prevention campaigns have existed in northern Canada for decades (Giles, Baker, & Rousell, 2007); however, boating fatalities in the Northwest Territories (NWT) are still well above the national average (Canadian Red Cross [CRC], 2013; CRC, 2014). In fact, while boating fatalities have decreased by about seven percent in most regions in Canada over the past decade, they have not decreased in the Northwest Territories (NWT), the Yukon, or Nunavut (CRC, 2013; Lifesaving Society, 2013). This represents an important health disparity that requires examination. Addressing boating incidents across the vast geography of the Canadian North is challenging, especially given the political and cultural differences between the territories. As a result, to better understand boating incidents in the North, I decided to focus on the NWT.

To address boating incidents and fatalities in the NWT, targeted injury prevention is needed to address those who are most vulnerable; this includes males aged 15-65, particularly Aboriginal¹ males, who participate in daily living and recreational boating in rural environments (CRC, 2013). For my thesis research, I used a community-based research approach to provide insights into the boating practices of Aboriginal men in Inuvik, NWT. My research addresses two research: i) what risk factors do community members perceive as contributing to Aboriginal men's boating incidents in Inuvik? ; ii), based on the results from question one, how can a community-based boating safety program be created that addresses the high rates of boating fatalities for this population?

Inuvik was selected as a research site because the community agreed to participate in a larger study (led by my supervisor, Dr. Giles) on boating safety practices in the NWT, which was funded through a grant from Transport Canada to the NWT Recreation and Parks Association (NWTRPA) and Dr. Giles. Residents of three NWT communities with differing geographies and

sizes were needed for the research. Residents of the first community, Inuvik (the site for my thesis research), agreed to be the “large” community in the study. With a population of 3,265 (NWT Bureau of Statistics, 2016c), it is located on Mackenzie River Delta, 100km south of the Arctic Ocean.

Inuvik was established in 1954 by the federal government as the administrative centre to service the Western Arctic and became the first planned town north of the Arctic Circle (Legislative Assembly of the Northwest Territories, 2012). Aklavik, the previous centre was prone to severe flooding and residents were forced by the federal government to relocate to the new town of Inuvik during the 1950s (Royal Commission on Aboriginal Peoples, 1992). Chief James Firth of the Inuvik Gwich’in Council explained that northerners also moved off the land to Inuvik to educate their children; however, “education as taught by white people, could not give our children a sense of the identity or the confidence to face the challenges of a changing world” (Royal Commission on Aboriginal Peoples, 1992). The residential school, Sir Alexander Mackenzie was built in 1959 and was later managed by the territory as an elementary school (Thurton, 2014). The school’s structure itself was not torn down until 2014 (Thurton, 2014). Inuvik is home to Gwich’in, Métis, and Inuvialuit peoples as well as trappers, pilots, scientists, and entrepreneurs that were drawn to Inuvik during the 1970s to 1990s when the town boomed following oil exploration in the Mackenzie Delta (Legislative Assembly of the Northwest Territories, 2012). By the 1990s, the oil industry collapsed due to low international oil prices, reduction of government subsidies, and local resistance to oil exploration (Legislative Assembly of the Northwest Territories, 2012).

The second study community was Fort Simpson. Fort Simpson, with a population of 1,204 people (NWT Bureau of Statistics, 2016b), was selected as the medium-sized community. It is located at the confluence of the Mackenzie and Liard Rivers. The third community, Déline, with a population of 521 (NWT Bureau of Statistics, 2016a), was selected as the small, remote community in the research. It is located on Great Bear Lake. In each of these communities, a community-based approach was undertaken to first understand men's boating safety practices within the community and, second, to ask community members to identify the best form of intervention for their community. The research for my Master's of Arts, which I have written in the publishable paper format and appears within this thesis, was conducted in Inuvik from May to August 2015 and March 2016. Below, I provide an overview of the literature upon which I drew, the epistemology, methodology, methods, and analysis that I used, 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 focus on the elevated status of injury and boating fatalities in the NWT. I will also examine the social determinants of health for non-Aboriginal and Aboriginal peoples and their relation to risk communication strategies for boating safety. I will then explore a public health approach to injury prevention, and the concept of cultural safety. Finally, I will examine previously successful culturally-based and community health intervention and prevention campaigns.

Current State of Injury in the NWT

The NWT is Canada's most populous northern territory with 44,088 residents who live in an area of 1.2 million square kilometres (NWT Bureau of Statistics, 2016c). Many of the NWT's

33 communities have access to natural or artificial swimming sites, such as pools. While these aquatic sites provide opportunities for subsistence, recreation, and fitness, they also pose risks. Between 1991-2010, the average rate of boating fatality in the NWT was 9.6 per 100,000, compared to the Canadian average rate of 0.6 per 100,000 (CRC, 2014) and males accounted for 90% of all boating fatality victims (NWT Health and Social Services, 2015). Risk factors for boating incidents are numerous: Environmental factors, such as cold water, current, strong winds, and rough water; high risk behaviours; alcohol consumption; poor swimming ability; and failure to wear a lifejacket (CRC, 2005).

Despite decades of water safety and injury prevention campaigns within the NWT (Giles, Baker, & Rousell, 2007), the rates of boating incidents are consistently higher in the NWT when compared to the Canadian average. High rates of boating fatalities in the territory indicates that current boating safety messages and initiatives may not be reaching the groups at highest risk for boating fatalities, including men and Aboriginal peoples. Below, I provide an overview of risk perception and risk communication and the role of gender and masculinity in contributing to risk-taking behaviours.

Risk Perception

Social, psychological, and cultural contexts contribute to how individuals perceive risk (McComas, 2006). Risk may be understood as the “things, forces, or circumstances that pose danger to people or to what they value” (Stern & Fineberg, 1996, p. 215), and it is typically described in terms of probability or likelihood of a loss occurring (McComas, 2006). Risk communication can be defined as “an iterative exchange of information among individuals, groups, and institutions related to the assessment, characterization, and management of risk” (McComas, 2006, p. 76). Byrnes et al. (1999) completed a meta-analysis of 150 studies that

examined risk-taking behaviours and determined that males are far more likely to take risks than females; however, the authors also found that risk perception differs among ages and contexts. Understanding what contributes to an individual's risk perception is essential for developing effective risk communication strategies (Howland et al., 1996), as lower risk perception is related to increased risk-taking behaviours (Byrnes, Miller, & Schafer, 1999). Additionally, males also underestimate the risks associated with dangerous activities (Zuckerman, 1994). In relation to boating safety, risk communication strategies need to align with how individuals perceive risk.

Risk-taking and novelty-seeking behaviours are typical characteristics of adolescent behaviour (Kelley et al., 2004). Adolescence as defined as the time during which one is 10- 18 years of age (Boyer, 2006). It is “characterized by greater impulsivity and sensation seeking” (Husted et al., 2006, p. 2010), partially due to a biological immaturity in certain individuals (Dahl, 2004; Husted et al., 2006). Risk-taking behaviours may decline from adolescence to adulthood partly due to “changes in the brain's cognitive control system – changes which improve individuals' capacity for self-regulation” (Steinberg, 2008, p. 78). In addition to age, risk perception can be influenced by gender roles, and in particular masculinity. For boat safety messages to be successful in the NWT, they must jointly address changes in risk perception and subsequent risk-taking behaviours due to age and the influences of different cultures of masculinity to develop effective risk communication strategies (Howland et al., 1996).

The Social Construction of Gender and Health

Gender is a socially constructed concept derived from cultural and subjective meanings that change depending on the historical and cultural context (Kimmel, 1995). From a constructionist perspective, men and women act and think in particular ways not because of their biological differences, but rather due to their internalized conceptions of masculinity and

femininity (Courtenay, 2011). From this perspective, gender is not viewed as a static binary, but as “a set of socially constructed relationships which are produced and reproduced through people’s actions” (Gerson & Peiss, 1985, p. 327). Gender is thus a dynamic social structure articulated through social transactions (Connell, 1995). Courtenay (2011) explained that individuals enact gender stereotypes to represent characteristics that they perceive to be typical of either women or men. Previous research has found that individuals usually do conform to and adopt the dominant forms of masculinity and femininity within a particular society (Bohan, 1993). Adopting hegemonic forms of gender may have important impacts on an individual’s health behaviours and beliefs.

The activities that men and women engage in, and the ways that they engage in them, can be understood as a demonstration of gender (Saltonstall, 1993). Crawford (1995) asserted that similar to language, health beliefs and behaviours can be understood as “a set of strategies for negotiating the social landscape” (p. 17) or as tools for producing gender (Courtenay, 2011). Similarly, Saltonstall (1993) stated, “the doing of health is a form of doing gender” (p. 12). Different forms of masculinities can be enacted and differentiated from one another through health behaviour practices (Messerschmidt, 1993). Unlike other activities associated with gender, such as the way we dress, the practice of defining oneself as a man or woman based on the use of health-related beliefs has direct impacts on an individual’s health status and lifespan (Courtenay, 2011). For example, perhaps the gender differences in boating fatality rates in the North can be partly explained through the adoption of safety behaviours that are considered to be typical of men or women. From the previous section, we know that men are more likely to engage in risky behaviour than women (Byrnes et al., 1999), and that they underestimate the risks associated with dangerous activities (Zuckerman, 1994). Increased risk-taking behaviour in males combined

with social pressure to enact conventionally masculine characteristics likely contribute to males being over-represented in boating fatalities. Examining and addressing issues pertaining to the performance of Aboriginal masculinity within a boating context is thus an area of particular importance in my research.

Masculinity

While masculinity may be employed as its own theoretical perspective, in this study understandings of masculinity were useful in situating the research problem and providing contextual information to better understand men's health behaviours. As some men use health behaviours and beliefs to demonstrate hegemonic masculine ideals to establish themselves as men (Courtenay, 2011), it is important to note that the current body of literature on masculinities is based on work with European or Euro-North American men. My research expands on the current knowledge of masculinities by examining masculinity among Aboriginal men in Inuvik, NWT in relation to their boating practices.

Various forms of masculinity are adapted from subjective and cultural meanings that change over time and place (Kimmel, 1995); thus, different forms of masculinity are constructed by different groups of men (Courtenay, 2011). Mainstream forms of masculinity examined in European or Euro-North American dictate that men should act in particular ways - for example, that men should be strong, tough, and self-reliant; that men should not act in "feminine" ways; and that men should welcome danger (Courtenay, 2011). These characteristics signify an idealized form of gender for European or Euro-North American men and may have detrimental effects on men's health (Courtenay, 2011). The effects of masculinity have not been extensively studied within Aboriginal communities (Innes & Anderson, 2015; McKegney, 2014); my

research thus contributes to better understanding the influences of gender on Aboriginal men's health.

Previous research on non-Aboriginal men has found that males who enact conventional or mainstream norms of masculinity engage in poorer health-related behaviours and have increased health risks than their peers who ascribe to less conventional forms of masculinity (Courtenay, 1998). The endorsement of conventional masculinity has also been associated with various unhealthy practices, including smoking, alcohol, drug use (Hamilton & Mahalik, 2009), and behaviours related to unsafe driving (Baffi, Redican, Sefchick, & Impara, 1991). In a large-scale longitudinal study, Courtenay (1998) examined young males in the United States and the influence of masculinity on their health behaviours over time. The study controlled for various psychosocial factors and identified that masculinity emerged as the strongest predictor of risk-taking behaviour two and a half years later (Courtenay, 1998).

Enacting conventional forms of masculinity is associated with risk-taking behaviour and health beliefs and behaviours, which directly impact overall health status and longevity. As such, it is essential for designers of health interventions to take masculinity into account, along with other factors that influence men's health, such as risk perception. Currently, there is little knowledge of the characteristics associated with different forms of masculinity enacted by Aboriginal men in northern Canada. To decrease boating fatalities in the NWT, we need more nuanced understandings of injury prevention strategies and programs that appeal to Aboriginal men and stronger considerations of roles played by the social determinants of health (Giles, Brooks-Cleator, McGuire-Adams, & Darroch, 2014).

Social Determinants of Health

The World Health Organization (2014) defined the social determinants of health as:

The conditions in which people are born, grow, live, work, and age, including the health system. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels, which are themselves influenced by policy choice. (para 1)

Drowning and aquatic-based injuries are usually understood as issues caused by individual behaviours and failure to engage with safety practices, such as wearing a PFD, boating while sober, or learning to swim; however, Giles and colleagues (2014) noted that this is a limited point of view that reflects the neoliberal belief that individuals are to blame for their own circumstances, rather than understanding health as being produced within particular social, historical, and political contexts. As researchers who have investigated the social determinants of Aboriginal health have pointed out, colonialism, discrimination, and loss of traditional health practices have all had devastating impacts on Aboriginal peoples' health (Loppie-Reading & Wien, 2009).

Colonialism is defined as “i) the control or governing influence of a nation over a dependent country, territory, or people; ii) the system or policy by which a nation maintains or advocates such control or influence” (Czyzewski, 2001, p. 1). Czyzewski (2011) has emphasized that there are and have been direct impacts of colonialism or colonial policies on Aboriginal peoples' health. Alfred and Corntassel (2005) explained that “colonialism is the narrative in which the Settler's power is the fundamental reference and assumption, inherently limiting Indigenous freedom and imposing a view of the world that is but an outcome or perspective on that power” (p. 601). This narrative provided the guiding force that manipulated the social, historic, economic, and political contexts shaping Aboriginal and non-Aboriginal relations (Czyzewski, 2011). These combined elements have affected and continue to affect the health of

Indigenous peoples. Colonialism has had and continues to have material consequences; colonial relations have produced and reproduced detrimental environments and conditions that determine health outcomes as well as employment, income, food security, and education (Czyzewski, 2011; Loppie-Reading & Wien, 2009). According to Giles, Castleden, and Baker (2009), the impact of colonial relations of power must be acknowledged in injury prevention strategies concerning water safety in Aboriginal communities if such communication is to be successful in preventing injury and death; in this thesis, I extend Giles et al.'s (2009) assertion to boating strategies.

To account for Aboriginal peoples' unique life histories and health inequalities, academic researchers, communities, governments, and non-governmental organizations have investigated the specific determinants of health that apply to Aboriginal peoples. Loppie-Reading and Wein (2009) identified the social determinants of Aboriginal health on behalf of the National Collaborating Centre for Aboriginal Health: Socio-political factors, holistic perspectives of health, life course, physical environment, health behaviours, employment and income, education, food insecurity, health care systems, educational systems, community infrastructure, environmental stewardship, cultural continuity, racism and social exclusion, self-determination, and colonialism.

The social determinants of Aboriginal health move beyond the World Health Organization's (2014) definition of the determinants of health as they specifically consider how health is shaped by Aboriginal worldviews, including cultural considerations and their relationship and dependency to the land (Loppie-Reading & Wien, 2009). The social determinants of Aboriginal health also emphasize the impact of colonialism, which includes the dispossession of traditional lands, the disruption of traditional practices, and the imposition of colonial institutions (Loppie-Reading & Wien, 2009) as influencing health. Injury prevention

strategies that address the specific social determinants of Aboriginal health are essential if such strategies are to be successful in preventing injury and death. Giles and colleagues (2014) argued that understanding elevated drowning rates in the NWT requires an examination of the social, cultural, and historical determinants that influence individual health outcomes. To address the social determinants of health, together with residents of Inuvik, we employed a public health approach to injury prevention by examining and then addressing men's boating safety behaviours in the larger social, cultural, and historical contexts in which boating incidents occur.

Public Health Approach to Injury Prevention

Injury prevention has been described by the Canadian Collaborating Centre for Injury Prevention (n.d.) as “making positive choices about minimizing risk at all levels of society, while maintaining health, active and safe communities and lifestyles” (para 13). Recent injury prevention strategies have emphasized the importance of a public health approach to examine the risk factors causing an injury, rather than simply encouraging individual behaviour change (Giles et al., 2014). A public health approach also considers the greater environmental context in which injuries occur (Penden et al., 2008).

The World Health Organization (2008) identified four steps to a public health approach for injury prevention, all of which I strove to address through my research, as detailed in Chapter Three. The first step is surveillance, whereby researchers identify the issue, who participates in injury-causing behaviours, and in what context the behaviours occur (Penden et al., 2008). In the second step, risk factors that may cause individuals to become injured are identified (Penden et al., 2008). Third, an examination of previous successful injury prevention strategies takes place (Penden et al., 2008). The fourth step is the implementation of an injury prevention intervention

(Penden et al., 2008). In addition to a public health approach, cultural safety was a useful tool upon which I drew in my research.

Cultural Safety

Culturally safe strategies have become widely used over the past 15 years. Cultural safety was conceptualized by nurse educators in New Zealand to address concerns of health inequities and inequalities between Aboriginal and non-Aboriginal New Zealanders (Giles & Darroch, 2014). Ramsden (2002), a Māori nursing scholar and major proponent of cultural safety, described it as focusing on “the notion of the nurse as a bearer of his or her own culture and attitudes, and consciously or unconsciously exercis[ing] power” (p. 109). Anderson et al. (2003) expanded on this explanation by stating that cultural safety “encourage[s] nurses to reflect on their own personal and cultural history and the values and beliefs they bring in their interaction with patients” (p. 198). Cultural safety is a way to shift privilege from dominant Western biomedical forms of knowledge to non-dominant forms of knowledge to better meet patients’ and participants’ needs (Smye & Browne, 2002). Cultural safety includes components of cultural awareness, competence, and sensitivity to understand power differentials inherent in healthcare services (Aboriginal Nurses Association of Canada, 2009). Importantly, however, cultural safety moves beyond terms such as cultural sensitivity or cultural awareness to ensure the consideration of social, historical, and economic contexts that affect an individual’s health care experience (Gerlach, 2007; National Collaborating Centre for Aboriginal Health, 2013). A culturally safe approach emphasizes that everyone has culture, not simply those from marginalized or non-dominant groups (Smye & Brown, 2002). Giles, Hognestad, and Brooks-Cleator (2015) noted that cultural safety it is an important direction for researchers working in the context of injury

prevention as a practical and ethical practice to provide equitable resources and services to marginalized populations, including Aboriginal peoples.

Socio-cultural communication strategies within health interventions rely on a thorough understanding of the beliefs and practices shared by most community members of the target group (Kreuter et al., 2003). This strategy can be applied to boating safety to create culturally safe water safety messages to influence behaviour change. For example, the Alaska Eskimo Whaling Commission, the United States Coast Guard, the Alaska Native Tribal Health Consortium, and Mustang Survival collaborated to produce white float coats to meet an Alaskan community's cultural beliefs and safety needs (Barber, 2010). The safety coats were designed in white to reflect Alaskan whalers' belief that brightly coloured flotation devices would scare away whales (Barber, 2010). This approach to communication took the community's cultural beliefs into account and allowed for the co-production of these new flotation devices (Giles et al., 2014). In addition to accounting for local cultural beliefs, successful health interventions are also often community-based in design (Giles et al., 2014).

Community-Based Boating Safety

Local community members should be included in boating safety programming, as they best understand the needs and challenges of their own residents (NWT Health and Social Services, 2004). For example, Giles, Strachan, Doucette, Stadig, and the Municipality of Pangnirtung (2013) used a community-based approach with Inuit in Pangnirtung, Nunavut, to try to improve boating safety. Participants in the study identified that Transport Canada's "Minimum Safety Equipment Requirements" (Transport Canada, 2014) did not meet their informational needs. Based on community members' input, the boating safety involved designing thermoses and magnets with Transport Canada's "Minimum Safety Equipment

Requirements” (Transport Canada, 2014) printed on them, as well as equipment that was not included by Transport Canada, but was deemed important by community members: Rifles, ammunition, knives, and harpoons (Giles et al., 2013). The list was printed in English and Inuktitut (Giles et al., 2013). During the project, community members were able to inform the research team about their own safety needs, which resulted in a culturally safe injury prevention strategy (Giles et al., 2013). As outlined through this project, community-based, culturally safe injury prevention strategies can lead to creative solutions to meet local residents’ self-identified needs.

In collaboration with community members in Inuvik, we used a community-based approach to better understand Aboriginal men in Inuvik’s boating safety and to co-create injury prevention resources. Below, I outline how I used a constructionist approach, postcolonial feminist theory, a community-based participatory research design, interviews and focus groups, to address my two research questions: i) What risk factors do community members perceive as contributing to Aboriginal men’s boating incidents in Inuvik; ii) how can we co-create a community-based safety resource to address the high rates of boating fatalities for this population?

Epistemology

I employed a constructionist approach to my thesis research. According to Crotty (1998), constructionism represents the view that all meaningful reality and knowledge is based upon human practices being formed by interactions between humans and their social world, and is constructed within a social context. Throughout my research, I considered local Inuvik practices and cultural meanings ascribed to boating safety, while I assisted in examining men’s boating safety behaviours and co-creating a community-based men’s boating safety program.

The constructionist perspective also views culture as a source of human behaviour and thought, instead of a result (Crotty, 1998). Societies and cultures actively produce human beings and bestow a lens from which to view the world (Crotty, 1998). For example, men engage in health and safety practices based on the concepts of masculinity they adopt from their cultural and social norms (Courtenay, 2011). To develop culturally safe strategies to decrease drowning rates, an examination of the social and cultural contexts that shape Inuvik male residents' perspectives of boating safety practices, including notions of masculinity was required.

Theoretical Framework

A postcolonial feminist theoretical framework informed my research. Here, I provide an overview of postcolonial theory and explore how postcolonial theory provides specific strategies for research with Aboriginal communities. Next, I provide an overview of the rise of postcolonial feminist theory and will outline how postcolonial feminist theory provides specific strategies for research with Aboriginal communities. Finally, I demonstrate how postcolonial feminist theory is complementary to a community-based methodology and was relevant for my project examining men's boating safety behaviours in Inuvik, NWT.

Postcolonial Theory

Postcolonial theories may be considered as “a family of theories sharing a social, political, and moral concern about the history and legacy of colonialism – how it continues to shape people's lives, and well-being, and life opportunities” (Browne, Smye, & Varcoe, 2005, p. 19). These theories emerged from a body of literature by authors such as Bhabha (1994), Gandhi (1998), Gilroy (2000), Hall (1996), McConaghy (2000), Said (1978), and Spivak (1990). Postcolonial theorists seek to understand how colonialism has partially informed and is being sustained in contemporary social and material conditions (Anderson et al., 2003; McEwan,

2001). Postcolonial theories address issues such as race, ethnicity, age, identity, and the relationships between knowledge and power (Anderson et al., 2003; McEwan, 2001). Ultimately, postcolonial theorists aim to decentre dominant culture and to acknowledge the perspectives of those who have been/are currently being marginalized and colonized and to expose the discourses portraying these groups of people (Browne et al., 2005).

The notion of “post” in postcolonial feminist theory needs to be addressed. Smith (1999) explained that “[to classify] the world as ‘postcolonial’ is, from Indigenous perspectives, to name colonialism as finished business... There is rather compelling evidence that in fact this has not occurred... the institutions and legacy of colonialism have remained” (p. 98). To simply understand postcolonialism as a period beyond colonialism makes the assumption that there existed only one period of colonialism and dismisses the fact that there were different periods of colonialism within different empires (Childs & Williams, 1997). For these reasons, I will draw on McConaghy’s (1998) conceptualization of postcolonialism as “a place of multiple identities, interconnected histories, shifting and diverse material conditions” and “in which new racisms and oppressions are being formed” (p. 121). As a researcher employing postcolonial feminist theory, I acknowledged McConaghy’s (1998) definition of postcolonialism and continue to be conscious of how colonial power still influences Aboriginal culture, discourses, and health status today.

Postcolonial Feminist Theory

A postcolonial feminist approach acknowledges marginalized group members’ experiences, not only women’s (Darroch & Giles, 2014). Feminist approaches are rooted in the premise of challenging hierarchical modes of the creation and distribution of knowledge (Hesse-Biber, Leavy, & Yaiser, 2004). In particular, postcolonial feminists “are primarily concerned

with de-colonizing the Other from the social and political forces that colonize, subjugate, disempower, and even enslave those deemed Other in a global context” (Hesse-Biber et al., 2004, p. 19). A postcolonial perspective also draws attention to the forces that maintain, encourage, and sustain power inequities (Anderson, Khan, & Reimer-Kirkham, 2011). Postcolonial feminist researchers attribute these existing power inequities to the colonial legacy that continues to dictate what is considered to be appropriate and normal in research (Cargo, Delormier, Levesque, McComber, & Macaulay, 2011). Particularly relevant to my research, Kimmel, Hearn, and Connell (2005) noted that a postcolonial feminist approach “has the potential to focus theoretical light on men in the periphery and to prompt new angles of research into masculinity that give greater weight to alternate paradigms (particularly, Indigenous knowledge systems)” (p. 90). As such, a postcolonial feminist lens provided a framework for me to examine the risk factors community members in Inuvik perceive as contributing to Aboriginal men’s boating incidents in Inuvik and to co-create a community-based boating safety intervention.

A Postcolonial Feminist Approach to Community-Based Research

Several authors have recognized that the use of a postcolonial feminist theory in concert with community-based research has the potential to expose the ways in which power inequities are perpetuated through dominant discourses and to provide a context for understanding health inequities (Anderson et al., 2003, 2011; Browne et al., 2005; Darroch & Giles, 2014). Research relationships typically reflect power hierarchies that are influenced by larger social imbalances including race, class, and education level (Israel, Schulz, Parker, & Becker, 1998). These power imbalances may result in the researcher being in a privileged position compared to the research participants. An important feature of postcolonial feminist theory is the intentional decentring of

the dominant culture to allow for the perspectives, voices, and experiences of those who have been marginalized to be heard (Reimer Kirkham & Anderson, 2002). Similarly, Baum, MacDougall, and Smith (2006) explained that questioning the nature of knowledge production and the ways in which knowledge can further reproduce the interests of individuals with dominant status in society is inherent to a community-based approach. A postcolonial feminist approach to community-based research repositions the health researcher from the dominant position of power and enables the research participants and community members make strong and meaningful contributions to the research process. This displacement of the researcher from a central position of knowledge production allows for more equitable research/power partnerships (Darroch & Giles, 2014).

A Postcolonial Feminist Approach to Understanding Men's Boating Safety Practices

I employed a postcolonial feminist theory as a framework to guide my research. As a southern Canada residing, Euro-Canadian, non-Aboriginal woman, this approach guided me to be aware of my position in relation to the research participants and to engage with Aboriginal peoples' knowledge and their experiences with colonialism. Smith (1999) acknowledged the importance of alliances between Aboriginal and non-Aboriginal groups when working towards the co-creation of knowledge. My commitment to my theoretical framework required me to work alongside research participants and assistants from the community of Inuvik to co-create understandings of boating safety and injury prevention through an examination of the intersections between gender, ethnicity, and safety practices. It also required me to challenge my own understanding of water and boat safety, which are steeped in my experiences as a swimming instructor, lifeguard, and boating safety instructor. I had to acknowledge that my knowledge of safety in swimming pools and southern lakes had limited applicability in an arctic context and

that far from being an expert, in the Arctic I lacked knowledge of basic safety principles and survival skills. Thus, I simultaneously had to acknowledge that those who had lived on the land and waterways for thousands of years, while lacking in formal qualifications, had much more knowledge than did I. Further, I had to acknowledge that due to my positionality, my ability to access all knowledge, particularly sensitive information, would likely be somewhat limited. Nevertheless, I believe that these limitations were at least partially addressed by my commitment to honouring the expertise of my advisory committee, which I discuss below, and the participants in the research.

As such, the postcolonial feminist perspective I used is complementary to community-based approaches in that they both strive to challenge and disrupt dominant relations of power, such as colonialism (Darroch & Giles, 2014) and can be used to identify culturally safe forms of injury prevention (Giles et al., 2015).

Methodology

I employed a community-based participatory research (CBPR) methodology to examine and address boating safety behaviours among men in Inuvik, NWT. This methodology was also appropriate for my research as it is used to attempt to realign traditional power relations between the researcher and research participants through partnership and collaboration between academic and non-academic contributors (Israel et al., 1998). CBPR differs from other methodologies in that its users strive to do work *with* rather than *on* marginalized groups, with the ultimate goal of community partnership leading to social and structural transformation (Baum, et al., 2006). Leung, Yen, and Minkler (2004) demonstrated that building relationships between the researcher and community members can result in improved quality of research and knowledge gained, improved validity of results, and improved community health through the development of

culturally safe strategies. CBPR users also have the ability to co-create knowledge through community/researcher collaboration, to advance community action, and to produce social change (Masuda, Creighton, Nixon, & Frankish, 2011). Below, I will provide an overview of CBPR, including the key principles of this methodology, along with its strengths and weaknesses. I then explain why this approach was appropriate for my research.

The Development of Community-Based Participatory Research

CBPR emerged as a response to the positivist paradigm in academic research, which “emphasizes a static, objective knowledge separate from the knower” (Israel et al., 1998, p. 176). CBPR has had three main influences: Kurt Lewin, Paulo Freire, and feminist theorists (Darroch & Giles, 2014; Israel et al., 1998; Reason & Bradbury, 2001). Kurt Lewin (1946) first coined the phrase “action research”, which he defined as a methodology where communities recognize their issues, strategize, take action, and then evaluate the results (Darroch & Giles, 2014). Lewin asserted that an individual’s behaviour occurs within a particular social and historical context and is determined by the entirety of an individual’s experience, including his/her interactions in inter-connected groups (Reason & Bradbury, 2001).

Paulo Freire expanded on Lewin’s (1946) work, though he also considered the *participatory* aspect of action research (Darroch & Giles, 2014). Freire influenced what became known as “participatory action research” through his demand for the reconceptualization of the hierarchal model of the production of knowledge and education (Leung et al., 2004). This included “breaking the monopoly over knowledge production by universities” and acknowledging other sources of knowledge production (Hall, 1999, p. 35). In addition, Freire urged marginalized communities to analyze the structural causes of their own oppression and to work towards social change (Baum et al., 2006).

Another important influence on CBPR has been feminist theorists, who have challenged the practices and structures of domination in all fields (Reason & Bradbury, 2001). Feminist theorists have called for new research and methodological approaches that are congruent with feminist theoretical perspectives and that are inclusive of marginalized populations (Reason & Bradbury, 2001). Feminist perspectives challenge dominant patriarchal outlooks of the world and strive to create opportunities for a balance of power between research participants and stakeholders in all aspects of the research process (Reid, 2004).

Key Principles of Community-Based Participatory Research

CBPR requires collaborative partnerships in all phases of the research project. Those who employ CBPR approaches recognize and work alongside communities to strengthen community members' sense of engagement and to address health issues that the community members have identified (Israel, Cummings, Dignan, & Heaney, 1994). Additionally, CBPR builds on the existing resources and strengths within a community to address its members' overall health. For example, communities may contain local resources, or their members may benefit from skills and resources outside of their direct community (Israel et al., 1998). CBPR approaches promote the integration of knowledge and action to benefit all partners, with a commitment to use research results to promote community change (Baum et al., 2006).

Importantly, researchers who use a CBPR methodology must recognize that members of marginalized communities often have not been able to exercise power to define their own experiences, and must acknowledge the inequalities between themselves as academics and community members (Masuda et al., 2011). In order to address these power relations, CBPR partners must draw attention to the knowledge and experience of community members and place

an emphasis on sharing information, decision making power, support, and resources between partners (Israel et al., 1998).

Strengths and Limitations of Community-Based Participatory Research

As with any methodology, CBPR has numerous strengths and limitations. The strengths of this methodology include that it allows for the collaboration of partners with various skills, experiences, resources, and expertise, which is useful for addressing complicated community health issues (Leung et al., 2004). Community engagement also has the potential to increase the relevance and usefulness of research data (Israel et al., 1998). Finally, CBPR researchers acknowledge that all partners have the ability to influence policies and to promote change that will benefit the community (Frisby, Reid, Millar, & Hoebler, 2005).

The two main limitations involved with CBPR are technical limitations and theoretical limitations. Technical limitations include that CBPR is an extremely time consuming approach and may be influenced by the amount of finances, resources, and time available (Frisby et al., 2005; Israel et al., 2006). Consequently, the extensive time and energy required to complete CBPR projects does not always fit well within traditional academic programs or funding systems (Frisby et al., 2005). Theoretical limitations of CBPR involve criticisms of the methodology due to a lack of theoretical framework that is specifically associated with it (Roche, 2008). Roche (2008) explained how historically there has been a separation between CBPR theory and practice, as researchers may perceive theoretical work as being removed from the community context. Roche (2008) cautioned that this separation might undermine CBPR's credibility in an academic or scientific framework. Lastly, CBPR approaches cannot level all power relations, and may even contribute to re-inscribing or reproducing existing power relations (Darroch & Giles,

2014; Reason & Bradbury, 2001). Despite these limitations, CBPR remains a robust methodology that is often employed in research with marginalized communities.

A CBPR research methodology involves the research participants, including community members and non-academic stakeholders, in all aspects of the research design. Therefore, following the principles of CBPR, this project involved partnerships between the Northwest Territories Recreation and Parks Association (NWTRPA), the Town of Inuvik, the Inuvik Hunters and Trappers Association, and me. The NWTRPA's Aquatics Committee, which consists of water safety experts from across the NWT agreed to serve as a research advisory group. This study was part of a larger study funded by Transport Canada's Boating Safety Contribution Program and in partnership with the NWTRPA and the University of Ottawa. Additional funding was also obtained through MITACS Canada and the Northern Scientific Training Program. Approval was gained for this project from the Research Ethics Board at the University of Ottawa and the Aurora Research Institute.

The advisory committee agreed that focus groups and semi-structured interviews would be appropriate research methods for this study. These two methods directly addressed the first three steps of a public health approach to injury prevention, surveillance, risk factors, and previously successful campaigns, and provided local knowledge and input towards developing the fourth step, an intervention.

Methods

I utilized two research methods, focus groups and semi-structured interviews along with a community-based participatory research methodology. The two research methods will be discussed below along with their application to the research project and participant selection techniques.

Focus Groups

A focus group is a “data-gathering technique that relies on the systematic questioning of several individuals simultaneously in an informal or formal setting” (Fontana & Frey, 2005, p. 703). With focus groups, the researcher acts as a moderator by directing questions and interactions among the group (Morgan, 2002). The objective of focus groups is to stimulate the participants to speak and respond to each other and to compare opinions and experiences (Gaskell, 2000). Focus groups may take on different forms depending on their purpose (Morgan, 2002). For example, Morgan (2002) identified two broad types of focus groups: A structured approach, which is applied more often in market research, and a less structured and rigid approach, which developed from focus group research in the social sciences; however, Neuman (2011) explained that focus groups are usually relatively informal whereby the researcher informs the participants about the topic of study and discussions are usually generated around that topic area.

Focus groups are useful in their ability to produce rich data that are elaborative and cumulative (Fontana & Frey, 2005). As well, focus groups may be beneficial as they can be stimulating for respondents and aid in recall of specific events (Neuman, 2011); however, due to the group interactions of focus groups, the requirements of the interviewer skills are greater than those required for individual interviewing (Morgan, 2002). A focus group facilitator must encourage individual responses from the entire group to ensure full coverage of the topic and to avoid the result of “groupthink”, whereby the focus group is dominated by one view (Fontana & Frey, 2005). Despite its difficulties, focus groups are a robust method and have the ability to obtain rich data that may not be possible through other methods. Focus groups may therefore be useful to gain insight into the complex issue of men’s boating safety practices in Inuvik.

Focus group interviews generally involve a group of 6-8 individuals from a similar cultural or social group who have similar experiences or concerns (Liamputtong, 2011).

Community members with extensive experience boating in Inuvik and/or were involved with a boating safety organization and were 18 years of age or older were recruited for the study. I hired two local research assistants to help with the study, especially the recruitment of participants: a 19-year-old man and a 40-year-old woman. The research assistants and I used snowball sampling to locate focus group and interview participants. Those who use this technique claim that a “bond” or “link” exists between the initial research participants and others in the same target community (Berg, 1988). Based on this link, the researcher is able to access additional participants through referral within a circle of acquaintance of the participant sample, hence resembling a rolling snowball as more participants are gained (Cohen & Arieli, 2011). This sampling technique is useful for research projects where the researcher is working alongside marginalized peoples, as these individuals may be “hidden” or “hard to reach” by the outside researcher (Cohen & Arieli, 2011; Valdez & Kaplan, 1999).

I held two focus groups in Inuvik. The first focus group consisted of five older males aged 30 to 85 and the second focus group consisted of five younger males aged 18 to 25. The focus group participants included two local lifeguards, employees of Parks Canada, and local hunters, harvesters, and recreational boaters. During the focus group, I asked questions that facilitated discussion based around the four steps of a public health approach: To determine who gets injured during boat accidents, the risk factors contributing to injury, previous boating safety campaigns, and to obtain input for a boating safety program developed by the community, for the community.

Semi-Structured Interviews

I also used semi-structured interview. The interview is a ubiquitous method used in qualitative research and popular western culture (Kvale & Brinkmann, 2009). Due to the omnipresence of television talk shows, scholars have asserted that we are living in an “interview society” (Fontana & Frey, 2005; Kvale & Brinkmann, 2009). Fontana and Frey (2005) identified three common types of interviews: Unstructured, semi-structured, and structured interviews. Interviews are a useful method for qualitative research as they provide participant knowledge and understanding on a specific topic (Kvale & Brinkmann, 2009). Interviewees may provide new insight into a certain subject area, offer alternative interpretations or understandings of an issue, or reiterate common views and opinions (Kvale & Brinkmann, 2009). Of the three interview forms, the semi-structured interview encompasses a technique that is systematic, yet flexible in nature.

During semi-structured interviews, a researcher typically asks open-ended questions to draw out responses from the participants (Kvale & Brinkmann, 2009). With this technique, questions are created prior to the interview; however, questions are flexible and are subject to change during the course of the interview based on the participants’ responses. During semi-structured interviews, a researcher may probe the interviewee and follow-up questions may be asked to gain further information (Barriball & While, 1994). This method will be useful for my research, as it enables participants to engage in a conversational setting that is less formal than structured interviews.

I used semi-structured interviews to gain insight into males’ boating safety practices. I individually interviewed two adult females and nine adult males for a total of 11 participants. Nine of the 11 interview participants were Aboriginal and of Gwich’in or Inuvialuit descent. The individual interviewees were aged 18-65 years old. The semi-structured interview participants

included the leader of the Inuvik canoe club, the leader of the Inuvik Qayaq club, and local recreational boaters, hunters, and harvesters. During the semi-structured interviews, I asked the participants questions based on the four-step public health approach to injury prevention in order to understand boating safety in Inuvik and to receive community input on a future boating safety intervention program for the community.

The two research methods of focus groups and semi-structured interviews directly addressed the first three steps of a public health approach to injury prevention: surveillance, risk factors, and previously successful campaigns, which allowed me to gain a stronger understanding of men's boating safety practices in Inuvik, and which provided direction for the fourth step, the implementation of an injury prevention poster campaign within the community that was developed to directly reflect community members' self-identified needs.

I digitally recorded all focus groups and interviews and then transcribed them verbatim. The interview and focus group transcripts were sent back to participants to provide feedback; however, none of the participants provided any comments on their transcripts. The focus group and interview participants gave permission for their first names to be included in this thesis, which I believed to be important due to the increasing recognition of the need to acknowledge Aboriginal peoples' expert knowledge (Giles & Castleden, 2008).

Analysis

I utilized thematic analysis supported by NVivo10TM software to analyze the focus group and interview transcripts. Thematic analysis is a qualitative method for recognizing, examining, and recording themes or patterns within data. Braun and Clarke (2006) identified six phases to thematic analysis. First, I familiarized myself with the content of the data by transcribing the interviews and focus groups and re-reading the transcripts, and by recording initial ideas to be

used in subsequent stages. Next, I identified initial codes within the data and attached these codes to the text to organize the data. Third, I sorted the codes into potential themes. Fourth, I reviewed and refined the themes. Fifth, I precisely defined and named the themes to reflect the broader overall theme of the data. I returned to Inuvik during March 2016 and was able to review the preliminary findings with participants, who supported the themes that I identified, but also helped me to refine them. Sixth, I wrote my thesis papers by selecting the most relevant and compelling data extracts to make a convincing argument in relation to the research question. Through thematic analysis, I was able to determine the specific risk factors relating to boating accidents in Inuvik (paper 1) and use a community-based approach to develop a boating safety campaign targeted towards Aboriginal men in Inuvik (paper 2).

Thesis Format

My thesis is written using the “publishable paper format.” Paper one addresses my research question: What risk factors do community members perceive as contributing to Aboriginal men’s boating incidents in Inuvik? Paper two addresses my second research question: How can we co-create a community-based safety program to address the high rates of boating fatalities for this population? Through these two papers, I hope that my research will make a strong contribution to addressing the gaps in the current literature regarding specific risk factors contributing to elevated injury rates of boating fatalities in the NWT and to co-creating community-based health programs with and for Aboriginal men. Finally, I hope that the results of my thesis can be used to improve community-based approaches to injury prevention in northern Canada.

Footnotes

¹ I use the term Aboriginal to refer to Inuit, First Nations, and Métis peoples in Canada, while the term Indigenous is used to refer to Indigenous peoples outside of Canada and to be consistent with the literature cited.

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Chapter Two: Risk Factors for Boating Incidents in Inuvik, Northwest Territories, Canada

Abstract

Injury prevention programs that focus on boating and water safety in the Northwest Territories (NWT) have existed for decades; however, rates of boating incidents are much higher in the NWT than southern Canada. To better understand this health disparity, I engaged in community-based participatory research informed by postcolonial feminist theory to examine Aboriginal men's understandings of the risk factors that contribute to boating incidents in Inuvik, NWT. Participants identified four main risk factors for boating incidents in Inuvik: 1) Gender, 2) age, 3) place, and 4) lack of boating safety education. As a result of these findings and the ways in which they are strongly related to culture, I argue that local community-based approaches should be employed to design and implement boating safety strategies in communities in the NWT.

In general, Aboriginal peoples experience poorer health outcomes than non-Aboriginal Canadians (Statistics Canada, 2015a). Further, Aboriginal men in particular suffer from worse social conditions than their female counterparts. As a result, Aboriginal men are one of the most socially excluded populations in Canada (Ball, 2010). Despite well-documented knowledge of these challenges, which are often historically rooted in colonialism (Czyzewski, 2011), there continues to be an absence of social advocacy, research, and health programs targeted towards Aboriginal men (Ball, 2010; Statistics Canada, 2015a).

In Inuit regions, injuries are the primary cause of premature death for individuals (Health Canada, 2008). Further, injuries such as suicides, motor vehicle accidents, suffocation and drowning, and homicide are the leading causes of premature death for Aboriginal males (Health Canada, 2009). Unintentional drowning, in particular, disproportionately affects Aboriginal peoples in Canada (Canadian Red Cross [CRC], 2013). This health inequity is partly due to Aboriginal peoples spending more time on natural bodies of water compared to non-Aboriginal

Canadians (CRC, 2013). Males are also overrepresented in drowning statistics, with males in Canada being more likely to be involved in boating fatalities than their female counterparts (CRC, 2014). This problem is exacerbated in Canada's northern territories, where the drowning rate is 5-10 times the Canadian national average in any given year (CRC, 2014). In the Northwest Territories (NWT), males account for 90% of all drowning victims (NWT Health and Social Services, 2015). Boating-related incidents make a large contribution to these drowning statistics. Between 1991-2010, the average rate of boating fatality in the NWT was 9.6 per 100,000, compared to the Canadian average rate of 0.6 per 100,000 (CRC, 2014). Despite the elevated rates of drowning and boating incidents for residents in northern Canada, water and boating safety, and injury prevention resources produced by organizations such as the Lifesaving Society of Canada, the Canadian Red Cross, and the Canadian Power and Sail Squadron continue to be developed in southern Canada and typically fail to reflect specific risk factors pertaining to the northern context (Giles et al., 2010; Giles et al., 2013; Giles et al., 2014b) or groups at elevated risk, including Aboriginal men.

The World Health Organization (WHO) defined a risk factor as “any attribute, characteristic, or exposure of an individual that increases the likelihood of developing a disease or injury” (WHO, 2016b, para 1). There is little knowledge of Aboriginal men's perceptions of the specific risk factors that they believe contribute to boating incidents in northern Canada. Indeed, even though Aboriginal men suffer from worse health outcomes than Aboriginal women, most scholarship, policies, education, and health promotion efforts focus on Aboriginal women's issues (Ball, 2010; Innes & Anderson, 2015; McKegney, 2014). To make a contribution that addresses the high rates of boating-related incidents in the NWT, together with my research partners and funding from Transport Canada and MITACS Canada, I employed community-

based participatory research to gain insight into Aboriginal men's understandings the risk factors that contribute to boating incidents in Inuvik, NWT.

Literature Review

To situate my research in the current body of literature, below I provide an overview of Aboriginal men's health in Canada, including their prevalence of injury. Next, I discuss the impact of colonialism on Aboriginal peoples' health, Aboriginal culture and tradition, and contemporary representations of Aboriginal men.

Aboriginal Peoples' Health

Injuries are recognized as a major public health concern for Aboriginal peoples in Canada (Health Canada, 2008; National Aboriginal Health Organization, 2006; NWT Health and Social Services, 2015). In Canada, 26% of all deaths among Aboriginal peoples are due to injuries, compared to 6% of deaths due to injuries within non-Aboriginal Canadians (Health Canada, 2006). Aboriginal peoples may be at elevated risk for injury due to isolated residence, physical environment, crowded housing conditions, and poor social conditions (CRC, 2013). Additionally, Aboriginal men are at higher risk for injury deaths than their female counterparts (Health Canada; 2001; Health Canada, 2008; National Aboriginal Health Organization, 2006).

In particular, drowning is the second most frequent cause of injury death in many Canadian Aboriginal communities (CRC, 2013). Aboriginal peoples are overrepresented in drowning statistics, with drowning rates up to 10 times higher than non-Aboriginal Canadians (CRC, 2013). The leading causes of drowning for Aboriginal and non-Aboriginal Canadians are boating, swimming or wading, and falls into open water (Health Canada, 2001). Risk factors for boating incidents include environmental factors, such as cold water, current, strong winds, and rough water; high risk behaviours; alcohol consumption; poor swimming ability; and failure to

wear a lifejacket (CRC, 2005). Additionally, colonialism continues to have damaging effects on Aboriginal peoples' health (Loppie-Reading & Wein, 2009) and can be related to many of these risk factors.

Impact of Colonialism on Aboriginal Peoples' Health

While health outcomes may be understood as being based on individual behaviour, such as the failure to consult a physician or to engage in healthy behaviours, this represents a limited point of view that reflects the neoliberal belief that individuals are to blame for their own circumstances, rather than understanding health as being produced within particular social, political, and historical contexts (Giles, Brooks-Cleator, McGuire-Adams, & Darroch, 2014).

The WHO (2014) defined the social determinants of health as follows:

The conditions in which people are born, grow, live, work, and age, including the health system. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels, which are themselves influenced by policy choice. (para 1)

Aboriginal peoples experience inequities in the determinants that influence their health when compared to non-Aboriginal Canadians. In general, Aboriginal peoples have lower rates of education attainments, lower socioeconomic status, lower quality housing, fewer employment opportunities, and weaker community infrastructure (Health Canada, 2009). Researchers who have investigated the Aboriginal social determinants of health have identified colonialism, discrimination, and loss of traditional health practices as additional factors that have and continue to have devastating impacts on Aboriginal peoples' health (Loppie-Reading & Wein, 2009). Northern political leader Mary Simon (2011) explained "we are still paying a heavy price for the legacy of colonization and for the societal stresses that accompanied rapid and intense

changes. The pace of these changes has been breathtaking. It has few parallels in the developed world” (p. 883).

Colonialism is defined as “i) the control or governing influence of a nation over a dependent country, territory, or people; ii) the system or policy by which a nation maintains or advocates such control or influence” (Czyzewski, 2011, p. 1). Alfred and Corntassel (2005) explained that “colonialism is the narrative in which the Settler’s power is the fundamental reference and assumption, inherently limiting Aboriginal freedom and imposing a view of the world that is but an outcome or perspective on that power” (p. 601). This narrative provided and continues to provide the guiding force that has manipulated the social, historic, economic, and political contexts that shape Aboriginal and non-Aboriginal relations (Czyzewski, 2011).

Czyzewski (2011) emphasized that there are ongoing direct material impacts of colonialism and colonial policies on Aboriginal peoples’ health; colonial relations produce detrimental environmental and social conditions that influence health outcomes as well as employment, income, food security, and education (Czyzewski, 2011; Loppie-Reading & Wein, 2009). In particular, lower income and education levels are strongly linked to vulnerability to drowning (CRC, 2013; NWT Health and Social Services, 2004; Salomex & Vincent, 2004). The continuing impacts of colonialism are evident in the ongoing systematic oppression of Aboriginal peoples, which is subsequently reflected in their poor health outcomes. Therefore, the impacts of colonial relations must be acknowledged when considering approaches to improve Aboriginal men’s health.

Aboriginal Culture and Tradition

Boating, which is relied upon heavily for transportation during hunting and fishing activities, plays an important role in northern Aboriginal peoples’ identities. Indeed, for many

Aboriginal peoples, especially men, subsistence hunting and fishing activities are important economic, social, and spiritual activities (Condon, Collings, & Wenzel, 1995). Using the land and waterways for subsistence activities offers “social continuity with the past and a vital sense of self-worth to those struggling with a new identity in a changing northern world” (Condon et al., 1995, p. 43). Simon (2011) also described the changes in Inuit lifestyle:

Sixty years ago, most Inuit were still living on the land. Inuit followed the seasonal rhythms of migrating wildlife of animals and conformed to age-old traditions of hunting and fishing, confident in their abilities and secure in their place in the universe. (p. 883)

Aboriginal peoples’ identities are defined by webs of relationships that include not only extended family, but for men and hunters living off the land, elements of the natural world, animals, spirits, and ancestors (Battiste, 2000); this has important consequences for health and health promotion. While referring to Aboriginal constructions of health, Aboriginal scholar Anderson (2014) stressed, “The health of the individual *is* the health of the collective... You are only as healthy as our Mother Earth, and all our relations” (as cited in McKegney, 2014, p. 97). It is thus essential that the wide range of Aboriginal practices and beliefs are acknowledged and meaningfully incorporated into health promotion, which includes boating-related injury prevention. Additionally, health promotion and injury prevention programmers should consider how Aboriginal men have been and are currently portrayed in contemporary Canadian life when developing new initiatives.

Contemporary Representations of Aboriginal Men

The cultures and identities of Aboriginal peoples are not fixed in time or place; rather, they are in a state of constant flux. They are created and negotiated within broader society. Despite this, Aboriginal men tend to be portrayed as static colonial subjects, such as “the noble

savage” or “the wise medicine man” (King, Smith, & Gracey, 2009; McKegney, 2014). Alfred (2014) explained the colonizing function of such representations: “There’s no living with it because it’s not meant to be lived with; it’s meant to be killed, every single time. They’re images to be slain by the white conqueror” (as cited in McKegney, 2014, pp. 1-2). Further, depictions of Aboriginal men tend to be deficit-based in nature, with a strong focus on high rates of incarceration (Cunneen, 2006; Government of Canada, 2013), obesity (Kuhnlein, Receveur, Soueida, & Egeland, 2004; Statistics Canada, 2016), unemployment (Statistics Canada, 2016), substance abuse (Statistics Canada, 2016), and low rates of formal education attainment (Statistics Canada, 2015d; Statistics Canada, 2016). As a result, “it is a challenge...to facilitate the development of healthy identities based on cultural strengths, not on disadvantage, disease burden and discrimination” (Durie, Milroy, & Hunter, 2009, p. 42). Racism is still widespread within Canada and there is lack of historical awareness of experiences of colonialism and the lasting impact of these events on Aboriginal men’s wellbeing and social opportunities (Kirmayer et al., 2003).

Any approach to improving Aboriginal men’s health must thus recognize the importance of Aboriginal cultures (Kirmayer et al., 2003). Health professionals must also acknowledge that Western biomedical approaches are themselves traditions embedded with practices and values systems, which may sometimes conflict with an Aboriginal knowledge system (Health Canada, 2009; Ramsden, 2002). Acknowledging biomedicine as a “tradition” within a particular cultural tradition (e.g., Eurocentric) may prompt health providers to reflect on the process of culture change as a two-way street, and to consider the exchange of values between the health providers and participants, a process known as cultural safety (Smye & Browne, 2002). A culturally safe approach to health care emphasizes that everyone has culture, not simply those from

marginalized or non-dominant groups (Smye & Brown, 2002). Culturally safe approaches may be particularly useful during community-based programs, wherein injury prevention researchers collaborate with local residents to develop new strategies. Below, I detail my employment of a postcolonial feminist theoretical approach and community-based participatory methodology with semi-structured interviews and focus groups to examine risk factors that residents of Inuvik, NWT, identified as contributing to Aboriginal men's boating incidents.

Theoretical Framework

Postcolonial feminist theorists strive to “expose, describe, and change ideological and social structures that maintain inequities between Aboriginal and non-Aboriginal populations” (Smith, Edwards, Varcoe, Martens, & Davies, 2006, p. 31). Generally, postcolonial perspectives also bring particular attention to the systematic forces that maintain unequal relations of power (Anderson, Khan, & Reimer-Kirkham, 2011; Reimer-Kirkham, 2003). A postcolonial theoretical perspective allows researchers to critically examine the modern demonstrations of colonialism and to decentre the dominant Western culture (Browne, Smye, & Varcoe, 2005).

In addition to these issues, postcolonial *feminist* scholars also attend to issues pertaining to gender. Academics and activists employ a postcolonial feminist lens to challenge the construction of a “universal female experience” and to acknowledge the need for a theoretical framework that considers the agency of non-Western women as well as their historical positioning, class, race, and gender (Chilisa, 2012). While postcolonial feminist theory is often used to examine women's experiences, it is also a useful tool for investigating the experiences of men who have experienced colonialism.

A cardinal principle of postcolonial feminism involves the examination and uncovering of Eurocentric biases (Racine, 2003). Eurocentric biases do not allow for the validation of

different knowledge systems or epistemologies, such as Aboriginal ways of knowing (Kovach, 2009). An example of Eurocentric bias may be demonstrated by the development of “expert” boating safety guidelines that have been established in southern Canada and applied in the North without accounting for geographical differences, cultural differences, or Aboriginal knowledge systems. Failure to recognize alternative knowledge systems relating to health that differ from biomedical or mainstream approaches reflect unequal relations of power in determining who is able to hold “expert” knowledge and create, implement, and evaluate injury prevention programs.

Postcolonial feminist perspectives are also essential to understanding and challenging notions of health based on individual responsibility, and instead considering the various ways individuals are affected by colonialism. For example, a postcolonial feminist approach to understanding boating safety in Inuvik would not view Aboriginal men as pathologically susceptible to boating incidents, but would rather acknowledge the social, political, and cultural contexts that contribute to boating incidents. Therefore, this theoretical approach is useful in examining the contexts that contribute to boating incidents, and to provide an opportunity to bring Aboriginal men’s understandings of risk factors for boating incidents in Inuvik, NWT to the forefront.

Postcolonial feminist theory is complementary to community-based research approaches because researchers who use both strive to challenge dominant researcher/research participant relations of power, and instead work to support marginalized knowledge systems (Darroch & Giles, 2014).

Methodology and Methods

This study was conducted in Inuvik, NWT, which is located 200km north of the Arctic Circle (68°21'N, 133°43'W) on the Mackenzie River Delta. Inuvik has a population of 3,265 (NWT Bureau of Statistics, 2016a). Its Aboriginal residents comprise 62% of the population: 18.4 % Gwich'in (First Nations), 38.9% Inuvialuit (Inuit), and 4.7% Métis peoples, while the remainder of the population is non-Aboriginal (Statistics Canada, 2010). The population is almost equally distributed: 49% of the population is male and 51% is female (NWT Bureau of Statistics, 2016a).

In the boating season from ice break-up in May to ice freeze-up in October, community members from Inuvik travel the Mackenzie River Delta for recreation, to access wildlife species crucial to diet and livelihood, and to travel to places with important cultural meaning. For at least 500 years, the Aboriginal peoples from the Western Arctic have hunted beluga whales in the Mackenzie River estuary (Harwood, Norton, Day, & Hall, 2002). During the boating season, present-day hunters and their families from Inuvik travel to their traditional whaling camps along the Eastern Beaufort Sea (Harwood et al., 2002). In 2014, 44.9% of community members from Inuvik over the age of 15 participated in traditional hunting or fishing activities and 51% spent nights on the land (NWT Bureau of Statistics, 2016b).

I employed a community-based participatory research (CBPR) approach to identify the risk factors associated with boating incidents in Inuvik. This project was part of a larger study in three communities (Inuvik, Deline, and Fort Simpson, NWT) that was funded by a grant from Transport Canada's Boating Safety Contribution Program to a partnership between the Northwest Territories Recreation and Parks Association (NWTRPA) and the University of Ottawa. CBPR approaches involve collaborative partnerships with community members,

researchers, and stakeholders in all phases of the research process (Israel, Schulz, Parker, & Becker, 1998). By working alongside community members, CBPR teams are able to address issues that residents identify as being important (Israel, Cummings, Dignan, & Heaney, 1994). This project involved collaboration between the Town of Inuvik, the Inuvik Hunters and Trappers Association, the NWTRPA, and me. The NWTRPA's Aquatic Committee, which includes water safety experts from across the Territory, agreed to serve as a research advisory group. Approval for this project was obtained from the Research Ethics Board at the University of Ottawa and the Aurora Research Institute (which issues research licences for the NWT on behalf of the Government of the NWT). I, a Euro-Canadian graduate student who grew up in Toronto, spent May to August of 2015 living in Inuvik.

The advisory committee agreed that focus groups (Kvale & Brinkmann, 2009) and semi-structured interviews (Fontana & Frey, 2005) would be appropriate research methods. I hired two local research assistants to assist with the project, a 19-year-old male and a 40-year-old woman. The research assistants and I used snowball sampling to identify participants (Cohen & Arieli, 2011). Inclusion criteria included that participants had to be over the age of 18 and have extensive boating experience in and around Inuvik, such as hunting, travelling, guiding, and/or recreational boating. I conducted 11 semi-structured interviews and two focus groups with 10 participants (which included two individuals who had also participated in the semi-structured interviews), for a total of 19 participants, 16 of whom were Aboriginal. The interview and focus group participants ranged in age from 18 to 85. Seventeen participants identified as Aboriginal. Interview participants included 2 adult females and 9 males, and the focus groups consisted of 10 males. The first focus group consisted of older males aged 30 to 85; the second focus group consisted of younger males aged 18 to 25. Notably, participants included local hunters,

harvesters, and recreational boaters, three local lifeguards, the leader of the Inuvik canoe club, the leader of the Inuvik Qayaq club, and employees of Parks Canada. The interviews focused on identifying who is typically injured during boating incidents, the risk factors contributing to boating incidents, the content and effectiveness of previous boating safety campaigns, and obtaining input into a boating safety program developed by community members for community members.

All interviews and focus groups were digitally recorded and then transcribed verbatim by the first author. The interview and focus group transcripts were returned to participants to provide feedback; however, none of the participants made edits to their transcripts. Participants' names appear with their permission and due to the need for Aboriginal peoples to be recognized for their expert contributions to research processes (Giles & Castleden, 2008).

I utilized Braun and Clarke's (2006) six-stage approach to thematic analysis, supported by NVivo10TM software, to analyze the interview and focus group transcripts. In the first phase, I familiarized myself with the data through the transcription of the interviews and focus groups and reading and re-reading the data. During the second phase, I identified initial codes and organized the data into groups. The initial codes included categories of different risk factors contributing to boating incidents: Weather, cold water, depth, gender, peer influence, and enforcement. The third phase included placing all data into codes. During the fourth phase, I reviewed the themes and determined if the codes represented the research question and data. The fifth phase involved defining the themes' names and further refining the themes. During the fifth phase based on community member's wording, I refined the themes into gender, age, place, and lack of preparedness and education. I returned to Inuvik in March 2016 and was able to review the preliminary findings with participants, who supported the themes that I had identified. The

final phase involved writing up the findings and situating the results into the existing literature, the results of which are found in this paper.

Results

Based on my analysis and supported by feedback from participants, I identified four main themes that related to the research objective of identifying boating incident risk factors in Inuvik, NWT: 1) Gender; 2) age; 3) place (with sub-themes physical environment and a lack of enforcement); and 4) lack of boating safety education. The themes and subthemes are discussed below.

Gender

Male participants, particularly those aged 18-25, referred to social pressure on men to act “like a man.” As a result, most participants agreed that women were more likely to engage in safety behaviours in boats, such as wearing a lifejacket, than men. Nineteen-year-old Ryan stated, “I see a lot more women wearing lifejackets as opposed to men.” Matthew, a local lifeguard stated, “I feel like men are kind of hard to reach out to, because if you want to be a tough guy and show off to other people, then you can’t be a wimp and wear a lifejacket.” Similarly, Ethan, an 18-year-old male, explained that his friends’ are not likely to wear a lifejacket due to the “I’m a macho man” mentality. Chris, a 19 year old male agreed: “You don’t want to be *that* dude wearing a lifejacket.”

Richard, an adult male, felt that it was the woman’s duty to be concerned about safety while the man typically navigates the boat: “That’s a woman’s caring duty, right? That’s what they’re going to do. With kids moving around in the boat, the woman’s going to say ‘sit down’, because the man is too busy observing and controlling the boat.” Matthew expanded on this sentiment: “Guys [are] either showing off for their guy friends or showing off for the girls,

definitely. I think girls are more [likely to say], ‘okay guys, quit being stupid. Wear a lifejacket.’”

Kyle, an adult male and owner of a local touring and guiding business, agreed that pressure to act like a man may play a part in risk-taking behaviours, but also noted that men may be at higher risk for drowning as a result of a boating incident because they are more frequently out on the water. He stated,

I think it has to with the macho-ness... but, the reason why I think it’s that high of a statistic for men [in boating incidents] is because the men are the ones who are out travelling, right? They’re the ones travelling 10 times more, so they drown.

Age

Participants indicated that those most likely to engage in unsafe boating behaviours and thus be involved in more boating incidents were those ranging in age from teenagers to their early thirties. Matthew explained that younger people are more likely to take risks and not consider the future consequences of their actions: “I think when you’re 18-34, you’re kind of in your cool phase and it’s like, ‘I can’t swim, but I’m not going to wear a lifejacket.’... [Men] don’t think before we do!” Additionally, participants referred to an individual’s risk-taking behaviours in relation to the person’s stage in life; specifically, they felt that individuals are less likely to take risks once they have children. Diana, mother of two explained, “[Men] don’t have fear [when they’re] younger. I think that once a person has children, then the fear sets in.” Jimmy, a local hunter and guide, attested that once he became a father, he became more conscious of his safety: “I don’t think about myself anymore, because I think about those other people that depend on me to come back home.”

Elder participants repeatedly expressed their concern for the “younger generation’s” vulnerability to boating related incidents, particularly as the younger generation is more engaged in recreational boating as opposed to traditional subsistence hunting or travelling. Richard explained,

The younger generation...are more recreational... They got the sea-doods...and the boats today are faster...When we were growing up, we learned [to travel safely]. But today, you try to tell someone that - they’ve got earphones in them and they’re not paying attention to you.

Diana agreed: “I think more of the boats [today] are used for leisure, not just going out for work, like going to the camps for hunting. A lot of [boats] now are just used for recreation for the younger guys anyway.” Mervin, an adult male, also stated, “It’s getting younger - young people are travelling between communities, and they get lost, or they run into trouble, and they panic. They’ve got three foot signs between here and Aklavik [a nearby community] and they still get lost!” Jimmy referred to risks associated with the shift to more recreational boating: “I think the changes from travelling on the land [for necessity] to more recreation is where the problems and where more accidents are happening, because when they’re more into recreational boating, that’s when alcohol and stuff like that is involved too.”

Place

Physical environment. Participants referred to local water and weather conditions as posing risks for boating incidents. Specifically, participants referred to cold water, strong currents, dangerous weather conditions, and changing water depths. John, an adult male, explained, “It’s cold and scary to fall in...When you first jump in, it takes your breath away. I wouldn’t want to fall off the boat.” Matthew referred to the current: “They’re like ‘oh, I can swim

in the pool' and then they fall in the river and the river just takes them away and they can't get out, 'cuz it's so strong." Gerry, an Elder who runs a local guiding company explained, "It is a great Delta out there and a great country, but you've got to be *so* careful. The weather and conditions out there can become very extreme very quickly and we are a long way [from help]."

Participants also referred to changing conditions in the physical environment as posing threats to safety. Gerry explained:

Things are changing; every year you notice it a little bit more. The water levels are lower than what it has been over the years and we are seeing a lot of erosion out in the Delta.

The water also seems quite warm compared to other years.

Richard noted that more extreme weather events are beginning to take place: "[Safety] is all about experience, because our weather is changing, you know. Storms are *severe* storms now. It's all changing."

Lack of enforcement. Participants referred to the lack of enforcement of laws, such as carrying required boating safety equipment and those concerning alcohol and boating, as contributing factors to boating incidents in Inuvik. Kevin, a local recreational boater and guide, explained, "There's no enforcement. Look at the territory. Look how poorly enforced a lot of laws are. Seatbelts. People driving without insurance. It just goes on and on and on. I mean, people just think they're above that." Tom also stated, "The police don't enforce any of the rules... You are supposed to have a flashlight and an anchor and lots of things [while boating], but nobody checks them." Kyle found the lack of enforcement troubling:

The rest of Canada has to abide by it, and we spend way more time in boats here, in way more dangerous conditions, so why? It seems like we are forgotten. [The police are] just

like, “oh fuck, who cares if they drown?” I mean, how else are we supposed to look at it when people are drowning 10 times more [in the North].

Lack of Knowledge and Preparedness

Participants identified boating incidents as occurring due to lack of safety equipment, overloading boats, or running out of gas/getting lost, all of which were attributed to a lack of knowledge and a lack of preparedness. Gerry stated:

People do get turned around because it is a huge Delta out there. It is not like following a street sign, like you are driving a car in the city... There are no numbers and no names out there, and it is just a very large piece of land, and a large piece of water, and it is not the easiest.

Kyle also stated that individuals who travel by boat are often unprepared due to a lack of education: “There's no real training available or education that's been put forth- water-safety education. People buy just enough gas to get where they're going. So then they're like ‘oh, I'm not spending \$50 on a lifejacket, why? I don't need it.’” Participants commonly stated that while individuals might have lifejackets in the boat, they were not commonly worn. Tom explained, “I mean lots of [local residents] have lifejackets, but they never use them.”

Discussion

To address boating incidents in Inuvik and to provide relevant health promotion and injury prevention strategies, an examination of the specific risk factors relating to boating incidents is required. In this study, the participants identified four main risk factors that male residents of Inuvik believe to be associated with men’s boating incidents in Inuvik, NWT: gender, age, place, and lack of enforcement, knowledge and preparation. While the risk factors of gender (Giles et al., 2013; Jardine et al., 2009), age (Giles et al., 2013), and place (Young et

al., 2016; Durkalec et al., 2014) have been previously identified by researchers as being important in terms of understanding risk-taking behaviours in northern Canada, these factors have not been assessed together in a specific community and cultural context, in relation to boating safety, and through a postcolonial feminist lens. Importantly, understanding the specific risk factors from Aboriginal men's perspectives may lead to health promotion or injury prevention activities that are culturally safe and thus more meaningful and effective for residents.

Gender

Participants in Inuvik referred to social pressure to “act like a man” as influencing their safety behaviours. Gender characteristics (McDowell, 1999) and risk perspectives (Kasperson et al., 1988) are recognized as being socially constructed, meaning they are shaped by a society through social, cultural, and historical practices at a given time and place. Aboriginal cultures are deeply connected to the land (Loppie-Reading & Wein, 2009), including waterways. Within northern communities, subsistence hunting and fishing activities are important activities for males in terms of economic and social benefits (Bodenhorn, 2000; Condon et al., 1995; Searles, 2002). Additionally, hunting and fishing provide northern males with the continuation of traditional activities, rest and relaxation, and an opportunity to re-establish connections with the land (Condon et al., 1995). Through a postcolonial feminist lens, I argue that as practices on the water are particularly important in terms of how Aboriginal men's gender are portrayed and reinforced in northern communities, health researchers and programmers should consider northern boating activities from Aboriginal males' perspectives and take into account the social benefits related to Aboriginal identity, mental health, and self-esteem associated with hunting and fishing (Bodenhorn, 2000; Condon et al., 1995). Acknowledging the cultural factors

associated with Aboriginal masculinity may result in health promotion or injury prevention campaigns that are more relevant and meaningful to communities.

Masculinities, or characteristics of men, may also be understood in relation to femininities, or characteristics of women (Pyke, 1996). For example, participants stated that it was women's duty to be concerned about safety, while men were more prone to risk-taking behaviours. Male participants explained that it was their wives, mothers, or girlfriends who would be more likely to tell them to put on a lifejacket. Additionally, male participants reported engaging in risky behaviours to show off not only to other women, but also to other men. This is consistent with previous studies with rural non-Aboriginal men (e.g., Courtenay, 2011; Fellows, 1996), which have indicated that social practices that undermine rural men's health behaviours (or lack thereof) are often signifiers of masculinity and the instruments men use not only in negotiating social power in relation to women, but also hierarchies of other men (Pyke, 1996).

As the rates of boating fatalities are much higher for Aboriginal men than women in northern Canada (CRC, 2014), consistent with postcolonial feminist theory, those working in health promotion and injury prevention in this region should consider Aboriginal masculinities when creating strategies to appeal to local residents. For instance, merely telling men to wear lifejackets as an injury prevention strategy is unlikely to be effective, as men may perceive this as adopting a behaviour that undermines their masculinity, and more particularly their Aboriginal masculinity. Instead, messages that draw on Aboriginal men's identity as providers for their families of traditional foods might be more effective (e.g., wear a lifejacket so the beluga meat makes it back to your family). In addition to gender, participants indicated that age was also an important risk factor that contributes to boating incidents.

Age

Participants explained that young males ranging in age from teenagers to their early thirties were the most likely to be involved in boating fatalities in Inuvik. This age range is consistent with data on Aboriginal peoples in Canada involved in boating fatalities, where males aged 20 to 49 years were found to have the highest fatality rates (CRC, 2013). Participants felt that younger men were more likely to show off to their friends and to not consider the potential dangers or long-term consequences of risk-taking behaviours while boating.

Risk-taking behaviours have been previously studied among males in the United States (e.g., Byrnes, Miller, & Schafer, 1999; Irwin & Millstein, 1991). Increased risk-taking behaviours among American teenagers have been attributed to biological immaturity, greater sensation seeking, and/or impulsive behaviours (Husted et al., 2006). While researchers at North American universities has typically looked at participants of European decent (e.g., Husted et al., 2006), this study illustrates that there are important similarities between Aboriginal and non-Aboriginal young men in their risk-taking behaviours.

Despite similarities with non-Aboriginal men, important differences exist between Aboriginal men, too, a point driven home by postcolonial feminist theorists. Many older participants in Inuvik expressed concern for the safety of members of the younger generation while boating or travelling on the Mackenzie Delta. Similar findings have been identified amongst residents in Igloolik, Nunavut, Ulukhaktok, NWT, and Churchill, Manitoba, who expressed similar concerns about youth and their exposure to environmental risks and hazards (Ford, Pearce, Gilligan, Smit, & Oakes, 2008). In Igloolik and Ulukhaktok, increased risk-taking behaviours of younger community members were associated with a loss of land-based skills and incomplete knowledge of safe hunting (Ford et al., 2008). As participants identified that younger men are more likely to engage in risky behaviours while boating, specific strategies should be

developed to appeal to this group and that also account for place, which I discuss in the next section.

Place

Boating in the Western Canadian Arctic is considerably different when compared to the rest of Canada. Participants in Inuvik referred to the unique characteristics of the physical environment of the Mackenzie Delta region as posing risks for boaters. For example, participants explained that cold water, strong currents, changing water depths, and dangerous weather conditions could lead to boating incidents, even for experienced travelers and boaters. Giles and colleagues (2010) suggested that water and boating safety education in the NWT could be more appropriate if water safety programmers from southern Canada decentred their expertise and engaged with approaches that consider the environmental context. Based on the challenges participants indicated, such as navigating the channels of the Mackenzie Delta or cold-water temperatures, boating safety advocates could work with community members to create meaningful strategies that educate the population about the specific physical features of waterways near Inuvik.

Participants noted that current boaters lack the knowledge to navigate the challenging geography around Inuvik. With access to more advanced technologies, residents of northern communities are now travelling and hunting in conditions that may have been considered dangerous in the past (Ford et al., 2008). Risk-taking has been linked to technological developments in northern communities (Ford et al., 2008). For example, residents in Igloolik and Uluhaktok indicated that carrying GPS systems or VHF radios may provide a safety net if an incident occurred; however, the devices have also resulted in overconfidence and less caution towards dangerous conditions by the users (Ford et al., 2008). Aporta and Higgs (2005) noted

that the reliance on locating devices, such as GPS, could also result in disengagement from Aboriginal knowledge concerning safety and local geography. Importantly, health researchers and programmers should acknowledge local residents' expert knowledge of place (Furgal et al., 2002; Giles et al., 2010), while also considering that forms of knowledge change over time (Giles et al., 2013). For example, health programs that utilize or promote new communication or location technologies in concert with local knowledge may be an effective way to engage northern men in addressing their safety practices.

Lack of Enforcement

Participants referred to the "lack of enforcement" and explained that little enforcement of laws such as those that require specific safety equipment on board and those prohibiting alcohol consumption while boating likely contribute to boating incidents in Inuvik. Some residents of Inuvik attributed this lack of enforcement to a lack of concern about Aboriginal peoples' lives – a clear reflection of beliefs that colonialism continues to have an impact on Aboriginal peoples' health. Enforcement is one avenue that could be pursued, but would require a significant investment in resources and would also put the responsibility for Aboriginal peoples' activities in the hands of what some might view to be colonial authorities.

Another way to promote lifejacket use would be to ensure that these items are better designed to meet community members' needs. For example, the Alaska Eskimo Whaling Commission, the United States Coast Guard, the Alaska Native Tribal Health Consortium, and Mustang Survival collaborated to manufacture white float coats (which are essentially the top half of survival suits) to meet an Alaskan community's cultural needs (Barber, 2010). The float coats were produced in white to reflect Alaskan whalers' belief that brightly coloured flotation devices would scare away whales, while the white would allow them to camouflage with ice

floes (Barber, 2010). The white float coats that were designed based on the target community members' local beliefs were immensely popular (Barber, 2010). The results from this project in Alaska demonstrate that safety equipment designed based upon northerners' input and designed for the specific environment has the potential to result in stronger uptake of injury prevention behaviours. Community members best understand their local beliefs and local environments and it is therefore essential for local residents to be involved in the identification of risk factors and the development and implementation of health programs and resources. In Inuvik, future research could also be conducted with community members to adapt existing resources or safety equipment and to take a community-based approach to the reduction of drinking and boating.

Notably, alcohol has been consistently identified as a major risk factor contributing to boating accidents in Canada, particularly amongst Aboriginal populations (e.g., CRC, 2005; CRC, 2013); however, with a few exceptions (e.g., mention of the lack of enforcement of laws concerning alcohol consumption while boating), participants in Inuvik did not refer to alcohol as an important risk factor for boating incidents within the community. The lack of discussion of alcohol and boating may be due to participants' social desirability bias (Randall, Huo, & Pawelk, 1993). Social desirability is understood as a "tendency of individuals to deny socially undesirable traits or behaviours and admit socially desirable ones" (Randall et al., 1993, p. 186).

As a non-Aboriginal outsider and female, participants may have tried to present themselves and their community to me in a favourable light. Certainly, within Canada, there are numerous racist stereotypes associated with Aboriginal peoples, including the prevalence of alcohol addiction (Backhouse, 1999; de Leeuw, Kobayashi, & Cameron, 2011). Many non-Aboriginal Canadians' attitudes and beliefs towards Aboriginal peoples remain heavily entrenched in colonial stereotypes (Bourassa, McKay-McNabb, & Hampton, 2004). Notably,

Statistics Canada (2015a) found that 34% of Inuit and 29% of First Nations people did not consume alcohol in the past year, in comparison to 24% of non-Aboriginal Canadians. Inaccurate or inadequate education about Canada's colonial history and role in creating inequalities and inequities that Aboriginal communities currently face transfers responsibility of social, economic, and health issues to Aboriginal peoples' failure to adapt, rather than the damaging effects of colonialism and racism (Harding, 2006). Loppie, Reading, and de Leeuw (2014) pointed out, "If decades of trauma are to be healed, systems such as justice and health need to address racial prejudice at all levels and move towards embracing the unique cultural traditions, healing, and needs of Aboriginal people" (p. 9). In the future, having a local and well-known community member lead the focus groups or interviews may mitigate this potential form of bias and enable participants to discuss the sensitive topics of alcohol and boating. In addition to lack of enforcement, participants also stated that lack of knowledge and preparation for boating activities also led to boating incidents within the community.

Lack of Knowledge and Preparation

Many participants in Inuvik believe that a lack of knowledge and preparation due to unavailable or irrelevant boating safety education contributes to boating incidents in the community. Understanding what equipment or knowledge community members deem important may lead to creative and culturally safe solutions to dealing with this lack of knowledge and preparation. For example, Giles and colleagues (2013) worked with community members in Pangnirtung, Nunavut, to try to improve boating safety. The campaign involved designing thermoses and refrigerator magnets that doubled as checklists with Transport Canada's "Minimum Safety Equipment Requirements" (Transport Canada, 2014). The checklists included equipment that was not on Transport Canada's list, but was identified as important by

community members (e.g., harpoons, rifles, and ammunition) and printed in English and Inuktitut (Giles et al., 2013). By informing the research team of their own safety needs, the community members were involved with designing injury prevention strategies that reflected their culture and met their self-identified needs (Giles et al., 2013). In Inuvik, health programmers could also work with residents to co-create culturally safe resources that reflect the informational needs that residents have highlighted as important, such as promoting the use of lifejackets within the community. A postcolonial perspective allows for the expert knowledge of community members to be brought to the forefront. Individuals, including Aboriginal men, may develop a strong sense of cultural identity by participating in the design and implementation of health strategies that meet their community's and individual needs (Buchanan, 2000).

As levels of low income and education are strongly linked to vulnerability to drowning (CRC, 2013; NWT Health and Social Services, 2004; Salomex & Vincent, 2004), these complex issues, which are tightly tied to colonialism, will also need to be considered by future researchers while addressing high rates of boating fatalities. Researchers or health programmers working alongside community members to design injury prevention resources that reflect the risk factors that residents have identified and acknowledge the social, political, and cultural contexts – particularly the legacy of colonialism, that contribute to boating incidents will be an important next step in helping to promote community members' boating safety.

Conclusion

Residents in Inuvik identified risk factors for boating incidents in the community as gender, age, place, lack of enforcement, and a lack of knowledge and preparation. While the factors of gender (Giles et al., 2013; Jardine et al., 2009), age (Giles et al., 2013), and place (Young et al., 2016; Durkalec et al., 2014) have been previously identified as important to

understanding risk-taking behaviours in northern Canada, these factors have not been considered in combination with each other, or through the perspective of northern Aboriginal men.

Given the proximity to and strong relationships between communities within the Beaufort Delta region, research that identifies whether the risk factors identified by community members in this research are similar to those of community others in neighbouring communities should be conducted. Future research should also be undertaken in Inuvik to further assess differences in risk factors pertaining to different groups (e.g., Gwich'in, Inuvialuit, Métis, and non-Aboriginal peoples) to enable the further refinement of injury prevention efforts, as well as the role of women in mitigating men's risk-taking behaviours in northern communities.

I argue that more holistic, community-based approaches to understanding boating incidents in the NWT have the potential to better address Aboriginal men's high rates of boating fatalities in the NWT. The results from this study demonstrate that Inuvik community members hold expert knowledge about their own health and safety needs and, importantly, that they are concerned about and interested in addressing boating incidents in culturally safe ways.

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Chapter Three: Community-Based Injury Prevention: An Example from Boating Safety in
Inuvik, Northwest Territories, Canada

Abstract

Unintentional injuries are one of the leading causes of death worldwide, yet they are predictable and avoidable events. Community-based approaches to injury prevention are those where researchers and/or injury prevention specialists work alongside the target population to identify injury prevention issues and then co-create strategies that are relevant to the population. In this paper, I provide an overview of community-based approaches to injury prevention. I then give an example of community-based injury prevention by providing an overview of a research project in which I worked with residents of Inuvik, Northwest Territories, to address Aboriginal men's boating safety practices.

In Canada and the United States, the leading causes of death for individuals aged 1 to 44 years old are injuries (Degutis & Greve, 2006; Public Health Agency of Canada, 2013). Moreover, unintentional injury and violence worldwide account for more than five million deaths per year, which represents 9% of total global mortality (Hanson, Finch, Allegrante, & Sleet, 2012). Most unintentional injuries are predictable and preventable events, which may be reduced by health promotion and injury prevention strategies.

The World Health Organization (2015) defined health promotion as “the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions” (para 1). Injury prevention, a facet of health promotion, includes activities aimed at preventing, reducing, treating, and/or ameliorating injury-related death and disability (Hemenway, Aglipay, Helsing, & Raskob, 2006). Below, I argue that community-based injury prevention initiatives enable injury prevention stakeholders to best address marginalized populations’ needs. I then provide an example from injury prevention research in the Canadian Arctic that examined and addressed Aboriginal men’s boating safety practices.

Literature Review

To situate my research in the existing body of literature, in this literature review I provide an overview community-based injury prevention strategies, including the principles of community-based injury prevention, the evaluation of community-based injury prevention strategies, and the strengths and challenges of community-based injury prevention.

Community-Based Injury Prevention

Relatively few studies have provided strategies for injury prevention interventions (George, McCormick, Lalonde, Jin, & Brussoni, 2013). To develop a successful injury

prevention program, it is essential to understand the social, cultural, and historical contexts in which the injury prevention initiative will occur, as individual health cannot be understood as separate from the environment in which individuals live (Elder, Schmid, Dower, & Hedlund, 1993). Nilsen (2006) explained, “people’s health and safety related knowledge, attitudes, behaviours, and skills reflect their life experiences and these experiences are determined by broader institutional structures, cultural forces, and social relations within the community” (p. 140). Community-based injury prevention programs offer an approach to reducing injuries by understanding and then altering community behaviours and norms (Klassen, MacKay, Mohey, Walker, & Jones, 2000).

Nilsen (2006) identified seven key principles of community-based health and safety programs, which include those that focus on injury prevention: Community focus, community member participation, intersectoral collaboration, substantial resource requirements, long-term program view, multifaceted interventions, and population outcome. The first principle of community-based health and safety programs is community focus. Within community-based programs, communities are recognized as both the target for the intervention and the agent of change. Communities may be defined by geographical location or by relational entity, which refers to social ties, shared interests, and similar cultural norms (Nilsen, 2006). Community member participation, the second principle, refers to “the social process of taking part (voluntarily) in either formal or informal activities, programs, and/or discussions to bring about a planned change or improvement in community life, services and/or resources” (Bracht, 1990, p. 201). Intersectoral collaboration, the third principle, refers to collaboration among different organizations and community sectors to work towards a common objective (Nilsen, 2006). The Substantial resource requirements, the fourth principle, emphasizes the importance of building

upon existing community resources is emphasized within community-based approaches due to the extensive time and funding required to support programs (Nilsen, 2006). Those who employ community-based approaches also recognize the importance of long-term interventions to achieve improved health and safety of populations (Nilsen, 2006). Multifaceted interventions are the fifth principle (Nilsen, 2006). Community-based approaches involve using multifaceted interventions including behavioral and environmental/ structural interventions to address multiple risk factors in different contexts and at multiple community levels (Nilsen, 2006). Lastly, the seventh principle is population outcomes (Nilsen, 2006), as community-based health and safety behaviours are aimed at improving health and safety levels at the population or community-level (Nilsen, 2006).

In summary, community-based health and safety programs are defined by collaboration and the involvement of community members to first identify the safety issue and to then develop solutions (Merzel & D’Afflitti, 2003). While program evaluation was beyond the scope of the current study, it is an important step in measuring the impact of injury prevention programs and therefore will be expanded upon below.

Evaluating Community-Based Injury Prevention Strategies

Program evaluation is an essential component to developing effective community-based injury prevention strategies. Program evaluation may be defined as a “systematic collection of information about the activities, characteristics, and outcomes of programs to make judgment about the program, improve program effectiveness, and/or inform decisions about future program development” (Patton, 1997, p. 23). Many different questions can be answered through program evaluations, which generally fall into one of the following categories: Implementation, effectiveness, efficiency, cost effectiveness, or attribution (McIntosh et al., 2009). Gathering data

during evaluation helps organizers develop programs, make changes, monitor progress towards goals, and judge the success of program in meeting objectives (McIntosh et al., 2009). The Centers for Disease Control and Prevention (CDC) developed six steps for evaluating public health programs that can be used in any evaluation: Engage stakeholders, describe the program, focus the evaluation design, gather credible evidence, justify conclusions, ensure use and share lessons learned (CDC, 2011). The CDC also set standards for a “good” evaluation used to assess the quality of evaluation activities. There are 30 specific standards that are organized into four groups: Utility, feasibility, propriety, and accuracy (for more information, see CDC, 2011). Program evaluations can assist in monitoring changes and assessing the impact of an intervention in producing these changes (McIntosh et al., 2009). Further, there is increasing evidence that program sustainability may be supported through well-implemented program evaluation (American Academy of Pediatrics, 2008).

Evaluations have shown that community-based injury prevention interventions have produced promising results for reducing child and adolescent unintentional injuries (Klassen et al., 2000). For example, community-based approaches are effective at increasing safety behaviours such as car seat use (Ehiri et al., 2006) and bicycle helmet use (Kett, Rivara, Gomez, Kirk, & Yantsides, 2016; Owen, Kendrick, Mulvaney, Coleman, & Royal, 2011). Successful community-based interventions have been found to utilize multifaceted strategies to reach individual community members (Nilsen, 2006). Additionally, community-based injury prevention interventions are more successful when they address unique community characteristics including culture or socioeconomic status (Klassen et al., 2000). A program evaluation may later be conducted in Inuvik to assess the impact of the boating safety education and awareness campaign on community members’ beliefs and attitudes towards boating safety.

Strengths and Challenges of Community-Based Injury Prevention Strategies

Community-based injury interventions may provide various strategic advantages for health promoters. For example, community-based programs may reach individuals on a large enough scale to influence major public health issues (Kelly et al., 1997). They may also address the social and cultural contexts in which safety behaviours occur and may be able to influence social norms, values, and policies that shape health (Elder et al., 1993; Sorensen, Emmons, Hunt, & Johnston, 1998). A community-based injury prevention approach may be especially important when attempting to influence marginalized populations, such as Aboriginal communities. In marginalized populations, community social networks are critical components of outreach, and behavioural and normative change may influence the diffusion of the interventions and their impacts (Kelly, 1999). Furthermore, community-based programs are implemented in real environments and social contexts, providing policy makers with community-tested evidence of program effectiveness and program feasibility (Kelly, 1999). Lastly, the sustainability of community-based interventions, including injury prevention programs, may be enhanced when programs draw on existing community resources and structures and generate local ownership and empowerment as well as producing social change (Elder et al., 1993; Kelly, 1999).

In addition to the strengths of this approach, as with any methodological approach, there are limitations to community-based injury prevention strategies. Challenges include theoretical and technical limitations. Theoretical limitations include criticisms due to a lack of theoretical framework that is specifically applied with community-based research (Roche, 2008); nevertheless, other scholars have argued that this theoretical flexibility is actually a strength (Darroch & Giles, 2014). Technical limitations include that community-based approaches require extensive time and funding; therefore, community-based projects may be limited by the amount

of resources, time, or finances available (Frisby, Reid, Millar, & Hoebar, 2005). In academic settings, the duration of community-based research may be problematic due to the duration of the research and the slow rate of publication outputs (Teufel-Shone, 2011). Despite the challenges of this approach, community-based injury prevention continues to be an important approach when working alongside marginalized populations (Kelly, 1999), such as Aboriginal peoples in the Northwest Territories (NWT), Canada.

Community-Based Injury Prevention: An Example from Inuvik, Northwest Territories

Here, I provide an overview of research that I conducted where I utilized a community-based approach to injury prevention in Inuvik, NWT. I do so to illustrate the ways in which a community-based approach to injury prevention can be implemented, in this case, with primarily Aboriginal (i.e., Inuit, First Nations, and Métis peoples in Canada) community members. A program evaluation has not yet been conducted; however, an evaluation may be later applied to assess the impact of the boating safety campaign on individual's attitudes towards water safety and inform future boating safety activities.

Canada's northern rural landscape is characterized by its abundance of natural bodies of water. The NWT is Canada's most populous territory with 44,088 inhabitants (NWT Bureau of Statistics, 2016a) across 1.2 million square kilometres. Canada's largest river, the Mackenzie River, runs through the NWT, which is also home to two of Canada's largest lakes, Great Bear and Great Slave Lake. Many communities also have access to artificial swimming areas, such as pools. While natural and artificial aquatic sites provide opportunities for recreation, fitness, travel, and subsistence, they also pose hazards. Certain individuals are at a higher risk for drowning or immersion deaths, which is "the process of experiencing respiratory impairment from submersion or immersion in a liquid" (Salomex & Vincent, 2004, p. 262), than others. For

example, males are overrepresented in drowning statistics and account for 93% of all boating fatalities in Canada (Canadian Red Cross [CRC], 2014). Risk factors for boating incidents include environmental factors, such as cold water, current, strong winds, and rough water; high risk behaviours; alcohol consumption; poor swimming ability; and failure to wear a lifejacket (CRC, 2005).

Despite decades of public safety campaigns directed at injury prevention and water safety in the NWT (Giles, Baker, & Rousell, 2007), rates of boating-related fatalities in the territory still remain much higher than the national average; between 1991-2010, the average rate of boating fatality was 9.6 per 100,000 in the NWT, compared to the Canadian rate of 0.6 per 100,000 (CRC, 2014). High rates of boating fatalities in the NWT indicate that current boating safety messages and initiatives may not be reaching those most vulnerable to boating fatalities, including men and members of Aboriginal communities. To decrease rates of boating-related fatalities in the NWT, we need more nuanced understandings of how community members themselves understand the problem and how they would like to see it addressed. Below, I outline research I conducted with community members to address these gaps in our understanding.

Methodology

This project was part of a larger research study funded by Transport Canada's Boating Safety Contribution Program and conducted in collaboration with the NWT Recreation and Parks Association (NWTRPA). Inuvik, NWT, is a community of 3,265 people, with 68.8% (n=2,247) identifying as Aboriginal, including Gwich'in, Inuvialuit, and Métis peoples (NWT Bureau of Statistics, 2016a). I spent four months during the summer of 2015 living in the town of Inuvik, which is located 200km north of the Arctic Circle on the Mackenzie River in the Beaufort-Delta Region. In 2013, 44.9% of community members from Inuvik over the age of 15 participated in

traditional hunting or fishing activities and 51% spent nights on the land (NWT Bureau of Statistics, 2016b). Between 2000-2009, drowning was the third leading cause of injury death in the Beaufort-Delta region and accounted for 14% of injury deaths there (NWT Health and Social Services, 2015).

I used a community-based injury prevention approach to examine how Aboriginal men in Inuvik wanted to address boating safety practices. Ethics approval was granted through the University of Ottawa's Research Ethics Board and I applied for and obtained an NWT Research Licence from the Aurora Research Institute, which licences research on behalf of the Government of the NWT. Prior to beginning the research process, I ascertained the Town of Inuvik's, the Inuvik Hunters and Trappers Association's, and the NWTRPA's interest in the research. All organizations were supportive of it. The NWTRPA's Aquatics Committee, which consists of experts in water safety from across the NWT, agreed to serve as a research advisory group. Together, these groups provided intersectoral collaboration (Nilsen, 2006) that allowed for different perspectives to be used to co-create knowledge to understand how men in Inuvik wished to address boating safety in their community.

Methods

The advisory committee agreed that semi-structured interviews (Fontana & Frey, 2005) and focus groups (Kvale & Brinkmann, 2009) would be suitable research methods for the project. From May - August 2015, I, a Euro-Canadian graduate student from southern Canada, completed semi-structured interviews with 11 people. I also conducted two focus groups with a total of 10 participants. Two participants who participated in individual interviews also participated in a focus group, for a total of 19 participants. Participants in the interviews ranged in age from 18 to 65 and included 8 males and 2 females. Sixteen participants identified as being

of Inuvialuit or Gwich'in descent. The first focus group consisted of older men aged 35 to 85 and the second focus group consisted of younger men aged 18 to 25. I paid focus group and interview participants an honorarium of \$50 each for their attendance and contributions.

All participants had local boating and/or water safety experience. For example, the participants included three local lifeguards, the leader of the Inuvik canoe club, the leader of the Inuvik Qayaq club. Other participants were local hunters, harvesters, and recreational boaters and travellers. I hired two local Aboriginal research assistants, a 19-year-old male and a 40-year-old woman, to help to locate participants. The research assistants and I used snowball sampling, a form of purposeful sampling, to find appropriate participants (Cohen & Arieli, 2011). The interviews focused on identifying the content and success of previous boating safety campaigns and obtaining input for a boating safety program developed *by the community for the community*. The focus group and interview discussions led to the development of the study themes, which we based directly on community member's ideas and comments. Over the summer, I also informally consulted with various community organizations (the Gwich'in Tribal Council, the Inuvik Hunters and Trappers Association, the Coast Guard Auxiliary, Ground Search and Rescue, East Three Canoe Club, the RCMP, and the Inuvik Qayaq Club) involved with boating or safety activities to determine the content of previous water/ boating safety campaigns and to gather input concerning what members of these organizations would like to see included in a new boating safety initiative.

All community members who participated an interview or focus group received an honorarium of \$50. The interviews and focus groups were digitally recorded and then transcribed verbatim. The interview and focus group transcripts were returned to participants, who were given the opportunity to omit any information or provide clarification if desired; however, none

of the participants provided any revisions. Participants' names appear with their permission and in recognition of their expert knowledge.

I analyzed the interview and focus group transcripts following Braun and Clarke's (2006) six-stage approach to thematic analysis, supported by NVivo10™ software. Thematic analysis involves recognizing, examining, and describing implicit and explicit themes or patterns in the data through a process of coding (Braun & Clarke, 2006). Preliminary results were reviewed with the advisory committee and community participants when I returned to Inuvik in March 2016. Participants and the members of the advisory committee agreed with the preliminary results, while they also provided feedback for refinement of the themes.

Results

The thematic analysis resulted in the identification of two key themes: 1) A need for collaboration on boating safety resources that reflect northerners' experiences and cultures; and 2) the need for a boating safety education poster campaign.

A Need for Collaboration on Boating Safety Resources that Reflect Northerners'

Experiences and Cultures

Participants identified that boating incidents are an important issue in Inuvik, NWT. All interviews and focus group participants were related to or knew someone who had been involved in boating fatality. Matthew, a local lifeguard explained, "Because it's such a small community, you know everybody." Kyle, who runs a local touring and guiding business, stated: "We have people drown in this community every single year, without fail." Kevin, the leader of the Inuvik Qayaq Club reflected, "I'm actually surprised there are [so few] accidents...I know there's...a huge amount that are unnoticed and unreported. The near misses - I hear about them all of the time." As a result of the abundance of incidents and near misses, the participants emphasized a

need for northern-based boating resources that reflected local peoples' experiences on the water. As Gerry, a prominent Elder, noted, "If you are boating in any other part of North America compared to what we are doing in the Western Arctic, it is *very* different."

Participants argued that community members' cultures need to be reflected in boating safety resources. Kevin explained:

There's a difference when the community members look at stuff [boating safety resources] and they might see like a big sailboat or a yacht, and it's not really applicable. Like it's hard to picture themselves...if they look and see the affluent white couple on their sailboat, that might not totally tie into people in the North.

Jimmy, a local hunter and guide, also noted the importance of having community members represented in boating safety resources: "As soon as they see a [familiar] face it hits close to home... 'Maybe I should start thinking about using [a lifejacket], this could be *me* on the poster.'" Gerry also mentioned the importance of a collaborative approach that includes local people in the resource design:

I think we have to work together and come up with a product that is going to be of assistance to our people that are travelling on the water within our region here and that is going to have meaning to it. [It needs to be] appropriate to the region... Maybe we'll put it in a couple of [local] languages, maybe we will use the Inuvialuit language and a little bit of the Gwich'in language, and then the white man language.

Richard, a local hunter and recreational boater, also felt that engaging in safe boating practices was important as a community. He explained, "[Safety] comes back to the responsibility of the community as a whole. We can all work together to make this work."

The Need for a Boating Safety Education Campaign

Most community members felt that if residents were more informed about boating safety, it would result in less risky behaviours, particularly concerning lifejacket use. For example, Gerry stated:

Education is key to a lot of stuff that is going on out there, whether you are working with the children or whether you are trying to help the people that want to get a pleasure craft operator's certification [Canadian boating licence], whether they want to take a wilderness first aid course or something, education is key to a lot of stuff. *Education is key to safety.*

Similarly, Jimmy stated, “What [safety] comes down to is education... I think that it’s a pretty important tool, that lifejacket, and the message has to get out.” Kevin pointed out that education may influence behaviour change within the community:

Everyone’s going to have some sort of hesitance to change...It’s probably because they don’t understand; it comes from a lack of education. And that seems to be a big one, because really, who doesn’t want to be safe? And a lot of people go, “I’m always safe.” And then also, really, who doesn’t want to protect the people they’re with? So once I think people understand that, it’s easier to do it. I think it’s kind of ridiculous... It’s really unsafe when you look at it, up here [northern Canada] versus down there [southern Canada], and there’s a big difference...and it's like, ‘Really? If you're that safe, then how come you have so many deaths for such a small population?’

Gerry also alluded to the great number of tragedies in the region:

I think it is a very important message that has to get out there. How we do that is something that we have to sit down and brainstorm...in order to get it there because we have too many tragedies, whether it is here or the Western Arctic, whether it is in other

parts of northern Canada or even North America, many boating accidents happen. People could still be here telling stories if they were wearing lifejackets.

Kyle stated, “It's ridiculous... There's no real training available or education that's been put forth, like water safety education. So, then they're like, ‘oh, I'm not spending \$50 on a lifejacket.’ ‘Why?’ ‘I don't need it.’” Overall, the participants felt that education focusing on lifejacket use was the key to increasing boating safety within the community.

Participants felt that a boating safety education campaign featuring northerners would be an effective strategy to improve boating safety within the community. Gerry explained the importance of including local community members in the boating safety campaign:

Local people are somebody that has a fairly good understanding of that region they are coming from. I have grown up in the Delta I have traveled the Delta by walking and by dog team as a kid. [It's important] to have somebody from the region that has a good understanding of what you are talking about when you talk about [it].

A local Elder, Tom, felt that including community role models could be an effective way to promote healthy behaviours: “The leaders are role models and people do what they see the leaders doing. If I were the eldest guy in the boat, I would say, “Make sure you all wear [lifejackets]!” Richard also felt that the community needed to be more proactive about promoting boating safety: “Showing [posters] of home-grown [safety] advertisement during the whaling season, it's going to cost a few dollars, but you're not going to wait ‘til something happens.” Diana, mother of two, agreed: “You want [health programs] to be proactive. For example, I ran this Mother's Day run because my mom died of cancer. We want to wear the lifejacket because we're all still alive and together.” Overall, the participants felt that education focusing on lifejacket use was the key to increasing boating safety within the community.

Participants argued that an educational campaign featuring print posters with local peoples would be an effective way to engage community members. Diana suggested, “We can put up posters!” Ethan, a local lifeguard, similarly agreed, “Posters would be useful to get the whole safety message across to community members.” Jimmy also stated, “We could use the bulletin board outside the pool and put up a sign or poster.” Kyle further stated, “I think some posters all over town would be helpful.” Richard reflected on how he thought people would feel after a community-based boating safety campaign: “At the end of the boating season, ‘thanks for that advertisement,’ ‘cuz it reminded me a couple of times to wear my lifejacket and I made it home safely.” Participants cited a local anti-bullying poster campaign called “Not Us” (see Sachs, 2012) developed by local youth as being an effective strategy that had worked in the past, and felt that a poster campaign on boating safety would have a similar impact.

Participants repeatedly expressed concern for lack of lifejacket use within the community; therefore, lifejackets were the focus of the poster campaign. Jimmy noted succinctly, “To see more people wearing lifejackets is the main goal.” During each focus group and interview, I asked participants to suggest messages that could be included on the posters. For example, Jimmy suggested, “Don’t wear your [lifejacket] for yourself; wear it for them [your family].” Richard also proposed, “Wear [your lifejacket] so you don’t worry others.” Community members identified two target groups, male subsistence harvesters/ hunters and recreational boaters, and developed specific risk messages for each group. The messages were first proposed during the older men’s focus group and then refined during subsequent individual interviews and the second focus group with younger men.

1. Harvesters/ hunters: *Are you a hunter or a provider for your family? Set a good example by wearing your lifejacket.*

2. Harvesters/ hunters: *I've got the axe, harpoon, gas, groceries, the main things... Am I forgetting anything? Set a good example by wearing your lifejacket.*

3. Recreational boaters: *Are you going to have fun? Did you tell anyone? Are you coming back? Lifejackets save lives if you wear them, don't sit on them, put them on!*

Each poster features an image of local people boating. The posters also feature an image of a prominent Inuvik Elder, Gerry. Gerry is of Inuvialuit and Gwich'in descent, and he grew up in the Mackenzie Delta. Tragically, Gerry also lost numerous family members in a boating incident outside of Inuvik in 2008. He served as an RCMP and later worked at Parks Canada as a Community Liaison Officer. Additionally, Gerry sits on a number of community boards such as the Gwich'in Land and Water Board and the Inuvialuit Harvesters Assistance Program. In 2011, Gerry was appointed Deputy Commissioner of the NWT. Every focus group and interview participant was familiar with Gerry, and they felt that he would serve as an important role model for the Inuvik community. Kevin explained: "Gerry is a really positive tie-in. I can't think of anyone else cooler than him!" Matthew also stated:

I think a lot of people look up to Gerry, especially in a community with so many Aboriginal people. They really do look up to their Elders. As Gerry gets older, he's almost getting more respect from the younger youth. He's also got a loud voice in the community. Whenever I think of him, I think of his loud deep voice. It's hard not to listen to him!

Tom also agreed: "Gerry is a role model. He does a lot of volunteering in the community." A northern media company was hired to finalize the design of the posters, drafts of which were presented back to the community in spring 2016. Community members were then asked to

identify the posters that they thought would be most effective. These were then printed and distributed (see Figure 1).

Figure 1. Inuvik boating safety posters.

**Are you a hunter
or a provider for
your family?**

**Set a good example
by wearing your lifejacket.**

uOttawa

Recreation for Life!
nwtrpa.org T: (867) 669-8375

NWT RECREATION & PARKS ASSOCIATION

“I’ve got the axe, harpoon, gas, groceries, the main things...Am I forgetting anything?”



Lifejackets save lives. Wear them, don't leave them at home.



 uOttawa

Recreation for Life!
   nwrtpa.org T: (867) 669-8375

 **NWT RECREATION & PARKS ASSOCIATION**

Are you going to have fun? Did you tell anyone? Are you coming back?



Lifejackets save lives if you wear them. Don't sit on them – put them on!



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 **NWT RECREATION & PARKS ASSOCIATION**

Importantly, program evaluation will not be possible until after the posters have been posted within the community during summer of 2016 and until time has passed to allow for the compilation of boating incident statistics. Therefore, program evaluation is beyond of the scope of this paper, but will be an important next step and area for future research.

Discussion

Boating fatalities occur at much higher rates in Canada's northern territories than the rest of the country (CRC, 2014). Local community members in Inuvik, NWT, have recognized this issue and have identified the need for northern boating incident prevention resources that reflect residents' local environments, cultures, and experiences. Using a community-based approach, community members and I collaboratively developed a local print poster boating safety campaign targeted specifically towards lifejacket use, which thus addressed community members' main concern in terms of boating safety. The development of the campaign directly addressed Nilsen's (2006) principles of community-based injury prevention of community focus, community member participation, intersectoral collaboration, substantial resource requirements, long-term program view, multifaceted interventions, and improved population outcome, all of which I examine in detail below. .

Community Focus

By involving local community members in the development of the boating safety posters, community members and I were able to collectively identify safety issues that affected Inuvik residents and to draw upon community members' knowledge and experiences to develop specific messages that would appeal to the local residents. Klassen and colleagues (2000) found that injury prevention interventions are more likely to be successful when they are created to specifically address unique community characteristics and contexts. For example, the posters

feature images of the local environment, including boats driving on the Mackenzie River Delta, and they also feature local community members. The posters were also printed in different languages (Inuvialuit, Gwich'in, and English) to reflect the local and diverse cultures in Inuvik.

Community Member Participation

Collaborative partnerships between community members and researchers have been found to enhance the degree of shared decision-making power and help to ensure that health promotion interventions are carried out in a respectful, relevant, and reciprocal manner, with benefits shared between Aboriginal and non-Aboriginal groups (Loppie-Reading & Wien, 2009). Participants in Inuvik were involved in defining the safety issue and developing novel boating safety resources, which were presented back to the community members for feedback in March 2016. Participants also identified two target groups for the intervention, Aboriginal male recreational boaters and harvesters/ hunters, and collaboratively developed boat safety messages to address each group. The participants also identified a local role model to be featured on the posters. The involvement of community members led to creative solutions that were specific to the community's needs and reflective of its members' cultures.

Intersectoral Collaboration

Local community members, stakeholders, the NWTRPA Aquatics Committee, and multiple local organizations (Inuvik Qayaq Club, East Three Canoe Club, the Gwich'in Tribal Council, the Inuvik Hunters and Trappers Association, the Coast Guard Auxiliary, and Ground Search and Rescue (a volunteer group led by the RCMP) played key roles in determining the poster campaign's focus. The different organizations were able to provide key information about the boating safety needs of their members. For example, the Hunters and Trappers Association and Gwich'in Tribal Council were knowledgeable about harvesters, hunters, and travellers,

whereas the Inuvik Qayaq Club and East Three Canoe club provided information about the needs of recreational boaters. The Coast Guard Auxiliary and Ground Search and Rescue also provided information from an enforcement and rescue point of view. Klassen and colleagues (2000) emphasized that effective programs involve community stakeholders and community consultation to define an intervention's goals. Further, Merzel and D'Afflitti (2003) found that health promotion and injury prevention strategies that are created without community input may be less effective, misrepresent community members, or be inappropriate to the target group. By involving local community members, stakeholders, and multiple organizations in the development of the boating safety resources, together we were able to collectively identify safety issues that affected the community and to draw upon community members' knowledge and experiences to develop specific messages that would appeal to the local residents.

Substantial Resource Requirements

Community-based injury prevention programs require extensive resources, including contributions of funding and time (Frisby et al., 2005). Funding support for this project was provided by Transport Canada's Boating Safety Contribution Program and it was conducted in collaboration with the NWTRPA, who provided several staff members who gave us their expertise and support and managed the funds. To ensure I had enough time to meet and collaborate with local communities and organizations involved in water safety, I spent four months living in Inuvik during summer 2015. Travel to and from Inuvik is incredibly expensive, as is the cost of living in Inuvik. I also returned to Inuvik in March 2016 to receive feedback on the project results and boating safety posters, the latter of which were finalized by a professional designer. By living in the community for four months, I was able to connect with the various organizations involved in water safety activities and complete the semi-structured interviews and

focus groups with a total of 19 participants, all of whom were paid for their participation. I also employed two local research assistants. Certainly, the above details all lend credibility to the fact that this project was time and resource intensive. Long-term applications of health and safety interventions may also contribute to the amount of time and resources required to sustain programs.

Long-Term Program View

Community-based initiatives acknowledge the importance of long-term interventions to improve the health and safety of residents (Nilsen, 2006). As community members' needs change, the NWTRPA Aquatics Committee can work with residents and other stakeholders to adapt the posters' messages, display new images, or identify additional role models. The results of this project can also be shared to other communities within the territory and adapted as residents' boating safety needs change over time, thus contributing to long-term efforts. Additionally, different forms of interventions may be used to appeal to residents, such as community events, local print poster campaigns, or boating safety courses.

Multifaceted Intervention

Multifaceted community-based interventions employ interventions addressed at multiple risk factors in multiple settings and community levels (Nilsen, 2006). The poster messages that were developed address gender, lifejacket use, and a variety of reasons for travelling on the water. The posters were designed to also to individuals, families, organizations, and the community as a whole, and will thus hopefully influence population outcomes. In addition to the boating safety posters, different water safety activities are offered within the community. For example, all children who attend the local Inuvik elementary school participates in swimming lessons from kindergarten to grade six as part of their physical education program. Additionally,

the Inuvik Qayaq club offers open drop-in classes on Sunday evenings at the Inuvik community pool. As such, there are different opportunities for adults and children to increase their water safety knowledge within the community; the posters thus represent a novel intervention and contribution to the multifaceted interventions in Inuvik.

Population Outcomes

To achieve population outcomes, community-based projects are directed at a population level (Nilsen, 2006). In Inuvik, the boating safety poster campaign was targeted towards Aboriginal male residents to improve their safety behaviours while on the water. Once enough time has passed for boating statistics to be compiled within Inuvik, the population outcome of the project will be able to be quantified. Importantly, given that it is part of a multifaceted intervention, other aspects of which started earlier, it may be difficult to ascertain its exact contribution to boating safety. Nevertheless, as the newest one, it will be possible to collect pre/post data.

Future Directions

The development of the boating safety poster campaign directly addressed the principles of community-based injury prevention: Community focus, community member participation, intersectoral collaboration, and substantial resource requirements, long-term program view, multifaceted interventions, and population outcome (Nilsen, 2006). After the posters have been displayed and statistics gathered, program evaluation will be possible.

Conclusion

A community-based approach has been highlighted as a key strategy in developing injury prevention initiatives with marginalized populations, including Aboriginal communities (Kelly, 1999). Community-based injury prevention interventions enable participation and collaboration

in all aspects of the intervention design and allow for the innovative adaptation of existing resources or the development of new ones, which can lead to creative solutions specific to a community. Community members in Inuvik identified the importance of a boating safety education campaign and participated in the development of a poster campaign that focused on lifejacket use and featured local images. Local residents also participated in identifying two target groups for the education campaign and developed specific messages that related to community members' experiences and cultural practices.

The implications of this research suggest that while community-based injury prevention programs may be costly and time consuming (Frisby et al., 2005), community members are key holders of local knowledge and, therefore, researchers and health programmers should draw their expert knowledge through the co-creation of injury prevention programs. This requires bringing community members' knowledge and experience to the forefront of injury prevention and health promotion campaigns and re-evaluating and challenging the researcher/research participant relationship whereby the academic researcher is often seen as the single holder of "expert knowledge" (Gaventa & Cornwall, 2001). Community members best understand their own experiences, needs, and cultures and therefore community-based strategies should be utilized when determining the need for focus of, design, implementation, and evaluation of future injury prevention campaigns in Aboriginal communities.

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Chapter Four: Conclusions

Over the course of my Master's of Arts, I have learned that as a non-Aboriginal female and outsider to Inuvik, Northwest Territories (NWT), there are many considerations to bear in mind while conducting research within Aboriginal communities, and particularly with Aboriginal men. The research process I undertook, which I endeavoured to make community-based and culturally safe, encouraged me to reflect upon my background as a privileged female graduate student from southern Canada. During the summer of 2015, which I spent in Inuvik, I learned that while I may have be an outsider to the community, participating in culturally safe dialogue afforded me the opportunity to act as an ally and to co-create meaningful health and safety initiatives alongside community members. Throughout my research, I also gained an understanding of the complexities of environmental, historical, social, and cultural factors that contribute to individual health, which subsequently reinforced my understanding that holistic approaches to health promotion and injury prevention are crucial to improving health inequalities within Canada.

In this conclusion, I provide a brief overview of the existing research concerning the prevalence of injuries in Aboriginal communities in Canada. Next, I describe my two articles and their findings to provide a broader view of their contributions to the existing body of literature. Finally, I will provide limitations of my study and key recommendations for future research regarding community-based injury prevention programs in northern Canada.

Existing Research

Injuries have been described as “the most serious public health problem facing developed societies” (Baker, O’Neill, Ginsburg, & Li, 1992, p. 3). Injuries are also a major public health concern for Aboriginal peoples in Canada (Health Canada, 2008; National Aboriginal Health Organization, 2006; NWT Health and Social Services, 2015). For example, injuries account for

26% of deaths among Aboriginal Canadians, compared to 6% of deaths among non-Aboriginal Canadians (Health Canada, 2006). In particular, drowning is one of the most frequent causes of injury death in many Aboriginal communities in Canada (NWT Health and Social Services, 2015), with drowning rates up to 10 times higher than non-Aboriginal Canadians (Canadian Red Cross [CRC] 2013). The leading causes of drowning for Aboriginal and non-Aboriginal Canadians are boating, swimming or wading, and falls into open water (CRC, 2013). The rates of boating-related fatalities in the NWT remain much higher than the Canadian national average; between 1991-2010, the average rate of boating fatality was 9.6 per 100,000 in the NWT, compared to the national rate of 0.6 per 100,000 (CRC, 2014). Males account for 90% of boating fatality victims in the NWT (NWT Health and Social Services, 2015).

Despite the elevated injury and boating fatality risk for Aboriginal men, there remains a dearth of research, social advocacy, and health programs focused on Aboriginal men compared to Aboriginal women (Ball, 2010; Innes & Anderson, 2015; McKegney, 2014). Furthermore, the study of northern masculinities is a relatively unexplored domain within academia (Collings, 2014). These injury disparities and lack of academic research on/with Aboriginal men demonstrate the need for additional research on how culturally safe injury prevention and boating safety initiatives can be co-created alongside northern Aboriginal men in an effort to reduce these health inequities.

My Efforts to Address Existing Gaps

Using a community-based participatory research methodology, in paper one I provided an examination of the different risk factors that community members identified as contributing to boating incidents in Inuvik, NWT, and I discussed the implications of this paper for health researchers and health programmers. Throughout paper one, I demonstrated how the intersecting

factors of gender, place, and culture coalesce and contribute to men's boating incidents in Inuvik. I also examined how my position as an outsider, female, and Euro-Canadian may have had an impact on the results from my study.

Paper two built on the results from paper one and examined how I used a community-based approach to injury prevention to co-create a boating safety resource for Inuvik. Guided by a community-based participatory research approach, I argued that local community members ought to be involved in the development and implementation of injury prevention campaigns. Informed by participants' suggestions, I co-developed a poster campaign that was targeted towards different groups of adult men in Inuvik and featured local images and locally-created messages that encouraged them to wear lifejackets while boating.

Taken together, both papers emphasized that local residents from Inuvik hold expert knowledge about their own histories, experiences, and cultures, and therefore researchers and health programmers should employ community-based strategies while designing, implementing, and evaluating future injury prevention campaigns in Aboriginal communities. By providing a review of existing literature, paper one demonstrated that boating plays an important role in northern Aboriginal peoples' identities (Condon, Collings, & Wenzel, 1995). Unfortunately, the cultural strengths of Aboriginal men are often ignored (Durie, Milroy, & Hunter, 2009) and misrepresented in Canadian life, as Aboriginal men are often portrayed as static – often drunk - colonial subjects (King, Smith, & Gracey, 2009; McKegney, 2014). The implications of my research suggest that health researchers and programmers need to engage with postcolonial feminist perspectives to boating safety to challenge and disrupt dominant relations of power, including who is defined as a boating safety “expert,” and to work alongside communities to identify culturally safe forms of boating safety resources.

Limitations

The limitations of my study include my position as a southern-based, non-Aboriginal, female researcher investigating Aboriginal men's boating practices in northern Canada, social desirability bias, a lack of program evaluation for the poster campaign, and a lack of structured observation.

Interestingly, I found that my position as a female researcher conducting interviews and focus groups with male participants may have both helped and limited my results. My research and interview participants did open up to discuss emotional or sensitive topics, such as peer influence; the role of males in the community, including fatherhood; and loss of family due to boating incidents, all of which may have been facilitated by the fact that I was female, and thus likely constructed to be a typically feminine caring individual, and also an outsider who did not know some of the people whose behaviour was being critiqued.

Despite the strengths brought by my positionality,, one of the limitations of my study concerns social desirability bias (Randall, Huo, & Pawelk, 1993). As a non-Aboriginal outsider and female, participants may have answered the interview or focus group questions in a way to present themselves in a favourable or desirable light. For example, alcohol has been previously identified as a major risk factor contributing to boating incidents in Canada, particularly for Aboriginal peoples (CRC, 2013; NWT Health and Social Services, 2004); however, participants in Inuvik did not identify alcohol as an important risk factor for boating incidents within the community. As I had a limited budget and limited time, I was unable to provide the extensive training necessary to prepare my research assistants to conduct the focus groups and interviews themselves. In the future, however, researchers who are also outsiders to their study community

may minimize this form of potential bias by having a well-known, local community member lead interviews or focus groups to enable participants to discuss sensitive topics.

Another limitation of my research is the lack of program evaluation for the boating safety poster campaign. Program evaluation may be defined as a “systematic collection of information about the activities, characteristics, and outcomes of programs to make judgment about the program, improve program effectiveness, and/or inform decisions about future program development” (Patton, 1997, p. 23). Program evaluation will not be possible until the posters have been implemented within the community and adequate time has passed for boating statistics to be gathered, which is outside of the timeline for the completion of my thesis. However, this will be an important next step and one that my supervisor plans to complete.

A final limitation of my study is the lack of structured participant observation. I had originally proposed to employ the research method of structured participant observation to gain a sense of typical boating safety behaviours in Inuvik by collecting structured data on boater identity (age, gender), boat type and size, weather conditions, and presence of safety equipment (PFDs, boat lights, extra paddles, etc.). However, the location of the boat launch, my lack of transportation, the presence of bears, and the fact that community members can boat round the clock during twenty-four hours of daylight and boating were thus not limited to specific hours of the day were all factors that made structured observation impractical. Fortunately, I felt that I was able to gain an adequate sense of men’s boating behaviours based on interview, focus group discussions, and by periodic informal observations at the Inuvik boat launch, the latter of which corroborated the information given by the research participants. Future health researchers or programmers may consider employing structured participant observation to gain quantitative

data of health and safety behaviours within a target community if they are able to overcome the barriers that I faced.

Final Thoughts

My thesis demonstrates the need for future community-based research conducted with rural and remote Aboriginal communities, and, in particular, Aboriginal men, to create culturally safe programs that address communities' needs. In order to decrease health inequities in Canada, injury prevention programs need to focus on those who are most vulnerable, including Aboriginal men living in rural and remote areas. Injury prevention programs that continue to focus on southern locations, resources, and populations risk maintaining the status quo and excluding the populations at highest risk for injuries. I hope that this research will be beneficial for both health researchers and injury prevention programmers by demonstrating how community-based approaches to research and program development can lead to meaningful interventions that are specific to the target community and by also demonstrating the expert insights that northern, Aboriginal men can give into improving their own health.

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Contributions

Catherine Glass developed, designed, and undertook this thesis, its theorization, analysis, and writing. Dr. Audrey 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 Glass as first author and Giles as second.

File Number: H08-14-21

Date (mm/dd/yyyy): 02/09/2015



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Ethics Approval Notice
Health Sciences and Science REB

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

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>	<u>Role</u>
Audrey	Giles	Health Sciences / Human Kinetics	Principal Investigator
Catherine	Glass	Health Sciences / Human Kinetics	Co-investigator
Geoff	Ray	Others / Others	Co-investigator

File Number: H08-14-21

Type of Project: Professor

Title: Understanding and addressing males' boating safety practices in the Northwest Territories

<u>Approval Date (mm/dd/yyyy)</u>	<u>Expiry Date (mm/dd/yyyy)</u>	<u>Approval Type</u>
02/09/2015	02/08/2016	Ia – Phase 2 only

(Ia: Approval, Ib: Approval for initial stage only)

Special Conditions / Comments:

At this time, the REB has solely reviewed Phase 2 of the proposed project, which consists of preliminary focus groups in three communities as well as semi-structured interviews (phone or Skype) with key informants.

Once the pilot intervention and its method of evaluation are designed, the researchers will need to submit a new application for ethics approval for Phase 4.

File Number: H08-14-21

Date (mm/dd/yyyy): 02/09/2015



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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://research.uottawa.ca/ethics/submissions-and-reviews>.

Please submit an annual report to the Ethics Office four weeks before the above-referenced expiry date to request a renewal of this ethics approval. To close the file, a final report must be submitted. These documents can be found at: <http://research.uottawa.ca/ethics/submissions-and-reviews>.

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.

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 For Daniel Lagarec, Chair of the Health Sciences and Sciences REB

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