

Understanding Perceptions of Aquatic-Based Risk in Pangnirtung, Nunavut

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The Northwest Territories and Nunavut report a drowning rate that varies between 5-10 times the Canadian national average (Waldram, Herring, & Young, 2006). In addition, Aboriginal northerners drown more frequently than do non-Aboriginal northerners. Past research has found several reasons for the heightened drowning rate in northern Aboriginal populations: alcohol intoxication; proximity to water; low water temperatures; failure to wear a lifejacket/personal flotation device/floater suit; amount of time spent on or near water; access to swimming lessons and lifesaving training (First Nations and Inuit Health Branch, 2001); and proximity to help (Saylor, 2004). Missing from this list, however, are considerations of climate change. The *Arctic Climate Impact Assessment* (2004) noted that unpredictable sea ice conditions, changes in snow quality and characteristics, and less multi-year ice all result in increased risks to human health related to activities that take place on arctic waterways. While these changes are being documented through Indigenous knowledge and Western scientific approaches (Kerr, 1999; Johannessen et al., 2004; Nichols et al., 2004; Nickels et al., 2006; Riedlinger & Berkes, 2001), the ways in which they may contribute to injuries and accidental death has received scant attention. For this study, we were interested in the ways in which residents of Pangnirtung view and manage risk in changing arctic aquatic environments. Our interviews revealed that the two main barriers to Pangnirtung residents' adaptation to the aquatic-related risks posed by climate change were found to be (i) resistance to adopting what some consider to be Eurocanadian practices and (ii) financial constraints.

During the summer of 2008, Pangnirtungmiut saw the impact of climate change in a very dramatic way when the banks of the Duval River that flows through the hamlet eroded to such an extent that the bridge over the river was rendered impassable, cutting off road access to the sewage treatment plant and water plant. The exposed, melting permafrost provided community members with first-hand evidence of climate change's impact; in addition, it focused a great deal of attention on the changing nature of aquatic environments within the community.

Understanding the way in which community members perceive and respond to changing aquatic conditions is particularly important to mitigating aquatic-related risk.

Methodology

During the summer of 2008, the second author (GS) resided in Pangnirtung from the end of May until the end of August. Ethnography, informed by participant observation, archival research, and semi-structured interviews, was to be used in an attempt to understand the ways in which the new community swimming pool could be used to create regionally- and culturally-appropriate approaches to water safety education. Unfortunately, due to facility problems, the swimming pool was unable to be opened for the entire 2008 summer season. As a result, participant observation and semi-structured interviews shifted from focusing on swimming pool programming to the water, boat, and ice safety practices and perceptions of risk in the natural environment (i.e., rivers, fjords, and the Arctic Ocean). Semi-structured interviews were conducted with seven males and nine females ranging in age from five to 84. Participants' names appear with permission.

Results

Interview data and field notes were manually coded and thematically grouped for analysis. Not surprisingly, participants identified that they believed that climate change was indeed occurring. Many noted that changing ice conditions were having an impact on their boating – and thus hunting – practices. Climate change was also perceived as changing participants' views of the danger associated with water-related practices. While some participants identified the use of lifejackets, personal flotation devices (PFDs), and floater suits as being important ways to mitigate aquatic-related risk, others suggested that such safety equipment was either inaccessible or culturally inappropriate.

Identification of Climate Change

All 16 interviewees reported that they had seen climate change. Jay Kilabuk noted several different ways in which he had noticed climate change:

Ya...the weather is different. [In the past in] October the [natural ice] arena would open, but now it opens in like December to January, like, that's like a couple months later now. And the [sea] ice can't really freeze now. Usually, like when I

was a little kid, we would go Halloween trick-or-treating when it was lots of snow, we would go on a skidoo, but now, today, there's no snow at all. Just frozen ground, like frozen rain, like caribou really can't get to their food because the rain froze [it to] the ground, on the top part. That, my grandpa told me that. And about the weather, like, it's more rough...it gets rough all of a sudden now. And the erosion on the river like, that's for sure. That, that was unbelievable, because that's pretty big proof about global warming, like the permafrost is melting under. That's a pretty big sign.

One female Elder stated,

I notice now, too, that the ice melts a lot faster. Like back then [in the past] even in the July we used to be able to travel by dog team. The ice goes just like that now...It takes a lot longer to form and isn't as thick as it used to be...In month of December before Christmas we used to be able to travel here by dog teams...The ice doesn't even form around there anymore...this winter she actually realized that it was as cold as it used to be.

Many community members also commented on the reduced snow on the mountains that surround the community.

Climate Changes' Impact on Boating and Snowmobiling Safety

Community members reflected on the late appearance and early disappearance of sea ice. Interestingly, the perceived reduction of ice in open water was viewed as being of benefit to fishing and boating. According to Jay Kilabuk, the fact that there were few "obstacles" (i.e., ice) improved boating. On the other hand, Kilabuk echoed other community members' concerns with the use of skidoos (snowmobiles) on thin ice:

There are, like, weak spots more now on the ice, like you can even tell, there are black, dark black colour or something like that, that goes down. You can see it with the ice. But I can't tell them, but Elders can.

One Elder stated,

It's a lot more dangerous [now], especially for hunters...right now it is very dangerous, as they can go through thin. Whereas you would never through on a dog team, [you would] on a skidoo...so we worry especially more with the skidoos... much [more than] when we relied on dog teams...we were able to

travel more on thin ice [with dog teams]. Even when the ice looks thick a skidoo can't go [on the ice].

Changes in ice thickness were viewed as being especially dangerous for inexperienced hunters:

But for new generation hunters, it's going to be, like, more dangerous for sure, 'cause they're just losing their Inuit traditional knowledge, like they're getting their traditions from down South, like new traditions, like new technology. They're...leaving out the Inuit tradition part, that's the most important thing.

Perception of the Role of Lifejackets and Floater Suits

Given the fact that Pangnirtung residents generally viewed the ice to be thinner, weaker, and thus less stable, we asked residents about the availability and use of lifejackets, PFDs, and/or floater suits. Flotation devices were generally viewed as being important. For example, one Elder said, "It's safer to wear lifejackets," and followed this statement by admitting that she was "scared of the water." Nevertheless, some residents reported that these safety devices impede their ability to hunt, fish, or be generally useful in the boat. One young woman stated that when wearing one she doesn't "have enough reach."

Despite the general opinion that flotation devices are important, few people reported wearing them, and very few were seen wearing them over the course of the summer. When asked about lifejackets, one young woman stated that, "White people want that [lifejackets]... 'Cause they [are] all white, and in the North we're Inuit. We just go. But if someone's going hunting with White people, most White people will wear a lifejacket." This same young woman reported the she thought that the practice of wearing lifejackets was a "little bit weird." One middle-aged Inuit man said forcefully, "The white man and the Eskimo are different, think about it. Our grandfathers didn't wear lifejackets in the kayaks - the white man and the Eskimo are different!"

Many interviewees suggested that residents do not wear flotation devices due to financial constraints. Meeka Alivaktuk stated,

Only people who can afford to buy them [wear them]. So there are a lot of kids who don't use them, like for boating. People won't, people like, some people can't afford to buy them 'cause they're very expensive. So some take a lot of risk.

Ooleepeeka Arnaqaq stated that she finds that "more and more people are starting to use the floater suits since the Hunters and Trappers [HTO] started having the hunters' support program."

Other interviewees reported that children were more likely to wear lifejackets in a boat than adults. For example, Alivaktuk further reported, “Kids are first – they come first.” One young interviewee who reported that she wears a lifejacket when boating, but that her parents do not, said that, “It makes me feel like I’m the only one who’s a bit safer.” Despite these reports of flotation device usage, results from participant observation suggested that they are rarely worn by community members.

Discussion

Our results show that Pangnirtung residents view aquatic-based activities, especially skidooring on ice, as being increasingly risky due to climate change. Despite the perception of enhanced vulnerability to harm and historically high drowning rates, local residents typically do not wear lifejackets, PFDs, or floater suits. As a result, understanding barriers to and ways of mitigating risk in an already risky aquatic setting become all the more important. The interviews revealed that the two main barriers to Pangnirtung residents’ adaptation to the aquatic-related risks posed by climate change (i.e., wearing flotation devices for protection in the event of falling through thin ice) were found to be (i) resistance to adopting what some consider to be Eurocanadian practices and (ii) financial constraints.

In order to understand why local residents appear reluctant to wear flotation devices, it is important to examine the context in which the risky behaviour occurs. Inuit in Canada have experienced an incredibly fast rate of change to their ways of life over the past 70 years. Saylor (2004) examined the use of safety equipment in Aboriginal communities and noted that,

unlike in the non-Aboriginal world [cars, snowmobiles, etc.] arrived much more abruptly in [Aboriginal] communities. Safety measures such as seat belts, car seats, helmets and other injury prevention interventions were not included at the time. Even today [...] personal flotation devices are not commonly used. (p. 313)

Certainly, colonial interventions into Inuit life have included the imposition of foreign laws and policies, including those pertaining to safety. Nunavut today operates as a neo-colonial state. Neo-colonial practices tend to be more difficult to recognize and resist than earlier, more overtly colonial ones (Ashcroft, Griffiths, & Tiffen, 2000). Nevertheless, several participants noted that the use of flotation devices was an unwelcome Eurocanadian intervention into their Inuit lifestyles. Certainly, the fact that water, ice, and boat safety campaigns that are developed in

southern Canada use images (e.g., images of trees, Eurocanadians, warm weather, etc) that differ vastly from Inuit lived experiences likely does not help the matter.

Another vestige of colonialism is the high rates of poverty faced by Inuit in Nunavut. According to the 2006 Canadian Census, the average earnings for a person in Pangnirtung was only \$20,069. While this figure is above the Canadian Low-Income Cut-Off for communities of less than 30,000 people, it does not account for the fact that the cost of living in Nunavut is substantially higher than the rest of Canada. Interviewees reported that the high cost of floater suits, lifejackets and PFDs served as a major deterrent from purchasing these safety items. Due to costs, participants reported that children were more likely to have and wear lifejackets than adults. The practice of having children and not adults wearing PFDs is problematic for a number of reasons. Firstly, the fact that Pangnirtung residents were not able to afford safety items that are legally required to be in a boat (though not worn) under Department of Transportation regulations is a sad commentary on the extent to which poverty drives people into potentially life-threatening situations. Secondly, in order to maximize the chance that children will wear lifejackets, it is important for adults to model the behaviour. For example, Treser, Trusty and Yang (1997) found that children are more likely to wear lifejackets in a boat when adults who are on board are wearing lifejackets; the inverse was not found to be true. Finally, in the event of an accident, it is important for children to receive assistance from adults. If adults are not wearing flotation devices, they will be greatly hindered, if not completely inhibited, in their attempts to help their children. Given the increasing risk posed by changing arctic aquatic environments, it is important for adults and children alike to wear flotation devices.

Conclusion

The perception that water safety is a strictly Eurocanadian practice is one that ignores the rich history of Inuit traditional knowledge pertaining to water safety (cf Baker & Giles, 2008; Giles & Baker, 2007; Giles, Baker, & Rousell, 2007; Giles, Castleden, & Baker, under review). Elders who were interviewed spoke about their childhood experiences of falling into the water and floating – not due to southern technology, but due to caribou skin clothing worn that had flotation properties. Such knowledge, however, is not included in water, boat, and ice safety campaigns that are typically developed in southern Canada. In order to facilitate adaptation to climate change, we suggest that three things need to occur: (i) PFD/lifejacket/floater suit loaner

programs should be made widely available to all residents; (ii) PFDs/lifejackets/floater suits should be made available to all residents at the local store at a subsidized rate; (iii) an aggressive water/boat/ice safety campaign that features local images and locally developed messages in Inuktitut; (iv) traditional knowledge should be included in safety campaigns. The second and third measures showed good uptake in an Alaskan community (cf Zaloshnja, Miller, Galbraith, Lawrence, DeBruyn, et al., 2003) and may meet with similar success in Pangnirtung.

Pangnirtungmiut and Inuit in general have shown a remarkable capacity for coping with change and adverse conditions; this capacity, however, should not excuse governments and organizations from providing the means through which the process of adaptation could be eased. While local Recreation Coordinators have not typically been viewed as having a role in coping with the impact of climate change, these individuals have the potential to play a key role in creating meaningful educational opportunities through which local residents could learn about ways to remain safe during recreational practices such as snowmobiling. Certainly, given recent dire climate change predictions, it is important to use all possible resources in order to mitigate the impact of coping with a changing arctic aquatic environment.

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