



Identifying barriers to healthcare delivery and access in the Circumpolar North: important insights for health professionals

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ABSTRACT

Lack of access to healthcare services for people living in the Circumpolar North may have important consequences for their health and well-being, both in terms of the actual treatment and other possible health-related consequences intertwined with their life situation. The aim of the present study was to identify the specific challenges to healthcare service delivery and access for populations in the Circumpolar North that are addressed in contemporary literature. A scoping review of literature published between 2005 and 2016 was conducted and 43 articles were selected for inclusion into the review. The review findings address 4 main themes identified in the literature: (1) the influence of physical geography, (2) healthcare provider-related barriers, (3) the importance of culture and language and (4) the impact of systemic factors. The review of the literature enabled us to identify existing gaps in both health service access and issues discussed in the available literature, particularly for informing healthcare services in the Circumpolar North, as well as point towards opportunities for future research. The thematic findings drawn from interdisciplinary and international literature inform understandings of the impact of health system barriers on healthcare services and the opportunities for Northern residents to support their own health.

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Introduction

Lack of access to healthcare services for people living in the Circumpolar North may present challenges that can impact not only the actual health treatment, but more broadly their ability to take care of own health and well-being [1]. Health professionals in countries in the north may work with Northern populations, by providing services in the Circumpolar North or when working with clients who are forced to travel south to access required services. We argue that it is vital for health professionals to be aware of the unique, diverse and intersecting healthcare system access issues in the Circumpolar North. The “Circumpolar North” refers to northern regions of countries in the arctic and sub-arctic region that are either partially or completely located above 60°N, including Canada, Denmark (Greenland and Faroe Islands), Finland, Iceland, Norway, Russia, Sweden and the USA (Alaska) [2].

The purpose of this scoping review study was to identify barriers to healthcare services in the Circumpolar North discussed in recent literature. We were interested in identifying factors influencing both patients and the healthcare professionals who provide

them with services. The results contribute to the literature by identifying and synthesising a broad range of issues that complicate the delivery of, and access to, healthcare services in the Circumpolar North. We also identify gaps in need of further attention.

The systematic approach adopted for this scoping review focuses on the challenges unique to this world region and provides an evidence-informed starting point for delivering better services to residents of these regions. We feel it is important for health professionals to be aware of the unique challenges Northern residents may experience so that this understanding can inform a more holistic and context-relevant approach to service delivery. While highlighting healthcare system challenges that may appear across the Circumpolar North, the findings make an important contribution towards understanding diversity within this geographic region, such as health disparities that exist among Northern populations between Indigenous and non-Indigenous communities [3]. It is important to specifically consider the experiences of Indigenous populations because they comprise a large proportion

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of circumpolar inhabitants, and experience their own set of unique circumstances stemming from colonisation that often negatively impacts their socio-economic status and health and well-being [4–7].

Methods

Using a scoping review methodology [8,9] we addressed the following research question: *What are the specific challenges to health care service delivery and access for populations in the Circumpolar North that are addressed in contemporary literature?*

An extensive search was conducted to locate all published primary research studies and reviews addressing the research question, including a search of 7 databases (ProQuest Sociology Collection, PubMed, PsycINFO, ProQuest Nursing & Allied Health Source, Scopus, CINAHL, and Web of Science), a hand search of the International Journal of Circumpolar Health (IJCH) and Polar Geography, and reference list screening of included articles. Table 1 lists the terms used to search for articles during the summer of 2016.

Articles were included if they were peer reviewed, published in English between 2005 and 2016, investigated challenges and barriers to healthcare accessibility, and focused on populations in northern regions of circumpolar countries (i.e. the Circumpolar North). Since access to healthcare services is related to health professionals' capacity to actually offer adequate services, studies focusing on the barriers faced by providers were also included.

A chart was created to track basic descriptive information about each study, as well as data about the focus of each article (i.e. population, objectives and research questions, methodology, summary of results and conclusions). Following an iterative process, as categories were developed to capture key themes identified in the literature, columns were added to systematically extract related data. The researchers generated themes from the extracted data based on commonalities in the identified barriers to healthcare delivery and accessibility.

Table 1. Specific search terms used for database searching.

Populations living in the high north	Challenges to healthcare accessibility
<ul style="list-style-type: none"> ● Circumpolar ● Arctic ● High North ● Remote 	<ul style="list-style-type: none"> ● Accessibility ● Social determinant(s) ● Health determinant(s) ● Health challenge(s) ● Barrier(s) ● Public Health ● Health care ● Healthcare ● Health service(s)

Results

Forty-three articles drawn from 28 different journals were included in the review. Nineteen were published in IJCH and the remaining low number of articles obtained from a broad range of journals indicates the challenge of locating evidence on this topic beyond the scope of IJCH. Each circumpolar country was addressed in at least 1 article, although the largest number focussed on Canada (19), followed by Norway (10) and the USA (9), with far less being published (in English) about the other countries. Seven articles addressed arctic regions of Denmark, 2 concerned Finland and just 1 article was found about each of Iceland, Russia and Sweden.

Four themes characterising barriers to delivery of, and access to, healthcare services were synthesised from our analysis: the influence of physical geography, healthcare provider-related barriers, the importance of culture and language, and the impact of systemic factors. Together, these factors negatively influence patient health outcomes.

Influence of physical geography

The majority of articles included in the review, 33 of the 43, addressed barriers related to physical geography. Findings related to this broader theme are divided into 4 sub-themes, described below.

Distance to urban centres

Twenty-three articles addressed challenges related to the distance separating communities from a broader range of health services available in urban centres [10–32]. The articles highlight that being isolated from major health system infrastructure influences the quality and types of services that are received in comparison to what is available elsewhere [13].

Individuals living in the Circumpolar North may have to travel extensive distances to reach other cities or even other countries for the health services they need, especially if these are specialised services [11,14–16,20,22,28,31,32]. For example, researchers found that some patients living in Greenland must endure 6 to 7 h of travel time to gain access to advanced care in Denmark [15]. The distance of the communities from specialised healthcare services can place stresses on patients as well as healthcare providers. The small size of community populations restricts the number of local healthcare professionals, and the distance to required services creates challenges related to repeated and extensive travel alone. Patients may need to spend time away from their family and work, causing financial and emotional stress

[17,21,26,30]. Some patients may even need to physically relocate [12]. A study conducted in northern British Columbia, Canada [17] captures this:

By the time you're done [treatment], I don't want to go back to [the treatment centre] anymore. I don't, I can't afford that anymore. There's more of a cost to it than just the financial cost, right? Again those of us with families, my kids are just little right? So to pack up and go to [the treatment centre] for 2 or 3 days is a big deal. (p. 315)

The literature identifies ways in which distances from healthcare services are perceived as an important barrier by the patients, and can influence whether or not they attempt to access them.

Weather and seasonal conditions

Ten articles directly addressed weather conditions that can affect individuals' ability to gain access to healthcare services by limiting safe travel for both patients and healthcare providers [15,18,19,27,33–38]. For example, in rural Alaskan communities, "it is not uncommon for airplanes to be grounded for low visibility due to fog, high winds, horizontal rains, or low clouds" [37, p. 11]. The difficulties caused by weather and climate conditions, such as blizzards causing high snow pileup, along with extremely low temperatures, frost and ice that can cause whiteout conditions, are stronger during the winter months [15,33,35,38].

Limited transportation options

Ten studies addressed ways that limited transportation options available in the Circumpolar North pose obstacles to healthcare service delivery [7,18,33,34,37–42]. Research found that infrastructure in rural areas may limit the amount of ground transportation individuals are able to utilise [7,40,41]. Some communities may face closures due to weather [33], or seasonal accessibility [37,38]. For communities that are only accessible by air or water, transportation to and from them is subject to weather and seasonal conditions described above [37]. For instance, a study conducted in Greenland found that the lack of roads between cities, as well as limited access by plane or ship, influenced the ability to reach perinatal healthcare services [39].

Travel and delivery costs

Seven articles directly addressed the barriers created by travel and delivery costs to northern regions [6,23,27,28,34,43,44]. Low population density and communities scattered over vast geographical distances contribute to costly transportation [43]. In order to service these large areas, higher costs are required for

patient and healthcare provider travel and for the delivery of medical supplies and equipment [27,43,44]. It was found that particularly within North America, increased use of air travel was common and expensive [6,27]. Rising costs can threaten the sustainability of healthcare, as shown by Hanlon and Halseth [43] who found that private service providers in northern areas of British Columbia, Canada, started withdrawing from areas that were considered too costly, leading to the service closures in some communities.

Healthcare provider-related barriers

The majority of articles (33 of 43) addressed barriers to healthcare delivery and access that were related to healthcare professionals specifically [6,7,10–14,17,19–22,24–30,33–38,40,42,44–49]. Practitioner-related barriers included staff shortages and high staff turnover, as well as lack of training, professional knowledge, skills and clinical expertise in treating specific medical conditions and working in areas that are distant from urban centres.

Healthcare staff shortages were identified in numerous articles as a key factor affecting patient access to services in northern communities [7,10,12,13,17,22,26,30,46,47]. One factor identified as contributing to insufficient staffing is the uneven distribution of healthcare professionals, with a greater supply of providers concentrated in urban locations [12,27,35,40,48]. Some northern regions may have clinics staffed by community health workers with little to no formal health education, visiting doctors and other healthcare professionals [27,48].

The recruitment of qualified healthcare professionals was found to be an important challenge [7,10,13,22,24,30,42,46]. Relocating further north can entail leaving behind supports that healthcare providers have in their home communities "down south" [30,42], p. 130]. Staff shortages were found to contribute to higher burnout among professionals due to increased workload, also contributing to longer waiting lists for patients and emphasised prioritisation of caseloads [7,10,17,22]. In a study of professionals working in northern British Columbia, Canada [7], the increased stress among study participants was clear:

I'm having to make pretty tough decisions on how to prioritize the caseload, that is overwhelming, because there is no other therapist. ... And I only work two days a week in each place, so I have to prioritize and pick the very, most compromised people, and how do I measure compromise? (p. 6)

The struggle to fill staffing gaps, and increased burnout and stress among healthcare providers was shown to impact healthcare access as well as quality of care.

Many studies identified high staff turnover as a barrier to healthcare accessibility in the Circumpolar

North [6,10,12,14,17,19,22,25,26,30,42,44,46]. Reasons identified as contributing to staff retention difficulties included the relative isolation of communities, being at a long distance from family, experiencing a lack of professional support and resources, and facing challenges in pursuing education for professional development [12,26,30,42]. High staff turnover was found to lead to a lack of continuity of patient care [22,35]. One participant in rural northern Saskatchewan, Canada, shared the following: "...because I live in the north and our doctors come and go. Sometimes I don't have a doctor for a few months at a time" [25, para 18].

Some studies also found that a lack of training, professional knowledge, skills and clinical expertise of healthcare professionals influenced the quality of services provided [7,10,11,17,19,24,30,33,34,42,46]. The knowledge and skills gained through education, along with the training health professionals may receive when beginning a new position, were found to be insufficient in preparing for the work demands experienced in northern communities [10,17,19,24,42]. As explained by a nurse working in Ontario, Canada: "people have less and less skills because there are [no] formal settings to get skills for this type of setting" [10, p. 557]. Opportunities for professional development are lacking in northern communities, as continuing education is typically offered in urban areas [7,30].

Importance of culture and language

Another prominent theme pertains to the challenges that are posed by differences in culture and language between healthcare providers and recipients, which were addressed by 23 articles included in the review [6,10,13,14,17–21,24,26,28,29,33,34,37,39,40,42,44,46,49,50]. Related issues linked to colonialism, such as discrimination and poverty, were also addressed in some of the studies and were shown to pose obstacles to healthcare access for Indigenous populations.

Language was identified as a barrier to healthcare access since the vast majority of healthcare providers in Northern Indigenous communities are non-Indigenous and do not speak the local Indigenous language [26]. The resulting communication challenges between patients and practitioners were found to have a negative impact on rapport, and impede the process of "examination, diagnosis, treatment, nursing, and care" [49, p. 117]. Even when Indigenous populations can access healthcare, they have been found to be less satisfied with the service received. This was illustrated in a study finding that Sámi-speaking patients in Norway felt that misunderstandings arose from the communication barrier between them and physicians [49].

The lack of healthcare practitioner knowledge about minority and Indigenous populations was identified as an important barrier. One study highlighted how nurses working in the northern regions of an unspecified western Canadian province were not prepared for the stark contrast between their own culture and that of the First Nations community, which led to social distancing by the nurses who "engaged in a process of Othering themselves" [42, p. 140]. With respect to differences in values, it was found that Indigenous populations may face unique obstacles to accessing and using mainstream public health services that do not meet their specific needs [17]. Indigenous populations may also experience difficulties locating information that is useful for their context, which can decrease their trust and willingness to rely on the care they receive. Not only have language differences been found to create barriers for patients trying to convey their illness and symptoms, but can also contribute to challenges in understanding health-related information provided by professionals [6].

Another factor influencing Indigenous peoples' access to and use of healthcare services was the discrimination that some individuals experienced, related to legacies of colonialism. For example, Sámi residents in Norway were found to sometimes view public healthcare as a service provided by "White man", which has "historically oppressed and persecuted their community" [50, p. 2]. Thus, it is common for members of the Sámi population to have a "deeply felt mistrust of health care institutions" [50, p. 2]. Turi and colleagues [50] also found that Sámi youth who experienced a higher degree of discrimination were less likely to use their school health services, and were also less likely to use mental health services.

Impact of systemic factors

Eight articles described health system-related factors as barriers to healthcare delivery and access, including the fragmented management of health services, lack of communication between management and staff, and lack of funding for the healthcare system in northern communities [10,11,17,19,34,43,46,47]. Healthcare professionals may not have adequate appreciation of constraints caused by the intersections of low income, unemployment, expensive costs of necessities in the North and poor housing. For example, 1 study reported that cancer patients often invested all of their money into receiving treatment, and consequently experienced significant financial difficulties related to travelling, rehabilitation and lost wages [17].

In research conducted in Northern Ontario, Canada [10,46], a lack of coordination and management of health services related to different agencies being charged with overseeing different healthcare workers and created difficulties in executing team-based, interprofessional collaboration. Other studies reported a lack of communication between higher-level management and staff posed barriers to healthcare service delivery. A few studies found that changes were often made without the consideration of staff opinions and feedback, and could affect the quality of care received by patients [19,24]. Lack of funding for health services in northern communities has led to cuts on available beds and stricter admission controls [19,43]. Decreased funding not only affects the quality of healthcare services provided but can also contribute to a lack of equitable access to medical care across regions.

Limitations

As there were only 1 or a few papers from several of the regions included in the review, broad generalisations about the relevance of each theme to each region cannot be drawn. Further, not all northern residents will face similar health system access barriers. At the same time, there are clear trends in healthcare delivery and access challenges as illustrated in the 4 themes, which warrant reflection and consideration with patients regarding if and how such topics may impact them. The general lack of published evidence on this topic provides minimal guidance to health professionals seeking to improve their service.

The majority of research institutions in circumpolar countries are not located in Northern regions; thus, it is essential to recognise the potential for differences in northern and southern perspectives on health, as well as differences between Indigenous and Western world-views [51]. This is reflected in the authorship of this article for which all researchers are non-Indigenous and are residents of southern regions of their respective countries (i.e. Canada and Norway). The exclusion of grey literature, often produced by local organisations also limited access to local northern knowledge and experiences with health system access.

Discussion

The results of this scoping review highlight many shared trends across circumpolar jurisdictions, as well as much diversity. Climate; health system funding and governance; the presence, population and colonisation of Indigenous peoples; transportation access and

infrastructure; population density; proximity to urban centres; and other factors all vary widely across northern regions. Lessons learned from this scoping review are beneficial for informing health professionals both in terms of service delivery issues and the broader consequences for health and well-being of their patients. Better understanding of the challenges identified can support reflection and solution-seeking. For example, recognising differences in transportation modes and climate, professionals may need to assess unique challenges, such as how a patient with hemiplegia may transfer onto a snowmobile or small aircraft [52].

Health professionals should also be aware that a system that is not adapted appropriately to serve client needs due to healthcare delivery and access barriers may impact the ability of individuals to take care of their own health. For example, rural cancer survivors in northern British Columbia, Canada, expressed that they were unable to depend on healthcare services because professionals were often late to appointments and were not well-equipped to provide treatment [17]. Further, having to travel significant distances to access health services is a time-consuming process that can disrupt all other activities engaged in during a typical day. Longer wait times to access services may also result in poorer health outcomes that may require increased support from healthcare and support services, which compound the issues in an environment where services are already limited. When clients' needs are greater than what local services can support, families may be put in the difficult decision of compensating for this service gap or moving to a southern or urban centre with greater resources.

The results of this scoping review are important in terms of not only what is present in the articles reviewed, but also what remains absent. A co-author of this article can attest from personal experience working in northern Canada that the results do not fully capture health service access issues. For example, when expensive travel is required, local providers become gatekeepers with the power to authorise access to specialised services or a second opinion [53].

Colonisation of Indigenous peoples is addressed in some articles, to varying degrees, but generally, its impact on health through health system structure and barriers was underemphasised given that many have argued that colonisation is a fundamental health determinant for Indigenous peoples [54]. Trust of outside healthcare providers, as described above, and as a product of colonisation in some regions, creates significant barriers to quality and complete healthcare access. Related to this, while research has addressed

the lack of access to professional development for healthcare providers, more fundamental to this, some regions lack local healthcare professional education programs, which causes a dependence on outside healthcare providers who are less likely to understand local culture and context. Some regions, such as Norway, have made efforts to establish northern training programs, which can provide increased opportunities for northern residents and improve recruitment and retention issues [53].

The heavy focus of articles reviewed on challenges related to physical geography and climate reflect an emphasis on the difference from southern regions as the norm (e.g. through the framing of communities as remote and isolated) and obscure the fact that, for Indigenous populations who have always lived there, this is their norm and healthcare was provided by local knowledge over thousands of years prior to colonisation [55]. For Indigenous peoples living in northern regions, the ability to access healthcare is linked with calls for Indigenous self-determination, whereby Indigenous peoples have rights to maintain traditional health practices, access public services and contribute to improving services according to their own priorities and values [56]. In regions where Indigenous populations are prominent, states must consider that serious service access issues may contravene Indigenous peoples' rights to equal enjoyment of good health when compared with citizens in other parts of the same country [56].

The information gained from this review is relevant to health professionals living in northern regions, for informing them of trends and helping to place local experiences within the broader circumpolar context. Given the small number of healthcare providers working in the Circumpolar North, this review highlights the risk of professional isolation. Northern health professionals are encouraged to connect with each other to share challenges and creative solutions (e.g. via video conferences, social media and email list-servs).

The results of this scoping review can also inform health professionals working in urban or southern regions of circumpolar countries. Recognising the challenges northern health professionals face in terms of accessing training and dealing with complex issues with minimal resources, southern-dwelling health professionals can build networks with those in the North, offering to answer questions and share resources. This can build the capacity of northern health professionals and may in some cases reduce required travel or length of time away from home for northern residents. In exchange, health professionals working in the Circumpolar North can offer information about their context, which can help improve the quality of

discharge planning southern health professionals are able to do for northern residents receiving their services [57].

Conclusion

Results of this scoping review offer learning opportunities and openings for networking for both northern and urban/southern healthcare providers. The thematic findings drawn from interdisciplinary and international literature inform understandings of the impact of challenges to healthcare services delivery and access on northern residents, including healthcare professionals and patients.

Future research should address the identified barriers by studying opportunities to enhance equitability. For example, research should consider specific training programs (e.g. cultural training) for healthcare practitioners working in the Circumpolar North, as well as opportunities for health professional education to be accessible to northern residents.

Inherent in a study on barriers to health service delivery and access is a focus on deficits. However, it is important to remember that a focus on deficits only can paint northern regions in a negative light, while they also have incredible strengths and resources that may be missed through this framing [58]. Future research should seek to highlight strengths and resources that may be built upon for health-system improvement, and must include northern residents in the design and execution of projects to ensure results are meaningful and relevant. This is especially important in Indigenous communities since differences between Western and Indigenous worldviews may result in inaccurate and inappropriate assessments of need if the local population is not involved. Indigenous worldviews on health are often holistic and relational, linking the health of the individual with that of the land, community and spirits [59]. Priorities for health may relate to connections to culture and traditional practices [60]. It is thus vital that research priorities be identified by Northerners themselves.

This article raises important considerations for researchers interested in working in the Circumpolar North. While the body of literature available about healthcare service delivery and access in the Circumpolar North contains much important knowledge, it is equally if not more important to consider what knowledge and whose perspectives remain unrepresented.

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