

CLOSING THE ABORIGINAL EDUCATION GAP

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KEY MESSAGES

Aboriginal Canadians are the youngest and fastest growing demographic in this country. They represent a pool of largely untapped talents and potential for positively influencing Canada's performance on the world economic stage. To bring those talents to the fore, there is a policy need to better enable Aboriginal learners' access to higher education. This study, therefore, is a synthesis of views and perspectives extracted from published studies concerning Aboriginal educational experiences. Canadian Aboriginals were found to have the following views regarding their access to, and experiences with, post-secondary education:

Aboriginal learners experience barriers to participating in higher education that are typical of all young learners: anxiety about moving away from home, trepidation about transitioning from rural to urban spaces, and uncertainty about social acceptance and long term prospects.

But Aboriginal learners also experience challenges unique to their cultural circumstance. A fear of racism and racial exclusion concerns many, as does a well-founded worry that their traditions will not be acknowledged or respected.

Solutions identified include the cultivation of Aboriginal-positive spaces, programs, and organizations on campuses, as well as investments in anti-poverty and scholarship opportunities earmarked for low income Aboriginal learners.

EXECUTIVE SUMMARY

We conducted a systematic review of the published, peer-reviewed literature to seek answers to three research questions: (A) What are the current challenges, barriers, and opportunities for Canadian Aboriginal people to accessing post-secondary education? (B) What are the opportunities for integrating Aboriginal educational practices and experiences into the Canadian global economic strategy? (C) What are the best practices and governmental policy options for maximizing inclusion of Aboriginal individuals in both higher education and resulting employment? Using qualitative theme and content analysis, themes were extracted from eight selected studies (1-8), which lead to the following key findings:

- The fear of losing their connection to their home communities and of being pressured to abandon their traditional ways of thinking and acting were major hurdles in Aboriginals' attempts to fulfill their educational goals.
- Much like non-Aboriginal students, Aboriginal learners feel a general sense of apprehension regarding moving away from home into a large urban community, as well as a concern of loss of the social support network, and worry about fitting into the new environment.
- Aboriginal students suffer from a fear and expectation of racism and exclusion on university and college campuses.
- Both personal financial limitations and family responsibilities present a powerful barrier preventing Aboriginal learners from accessing higher education.
- Campuses can better attract and retain Aboriginal learners by enhancing the visibility and substantive nature of both Aboriginal studies programs and any existing Aboriginal presence.
- The creation of safe spaces on campuses, to which Aboriginal students can retreat to seek peer guidance and reflection, can be an effective strategy to enhance such students' mental health and learning outcomes.
- The role of student organizations specifically dedicated to making Aboriginal students feel welcome and supported was stressed by respondents, who felt that such a service is a prophylaxis against both social stress and fears of xenophobia.
- Governments can help by directing funding to scholarship programs, travel and accommodation assistance, and anti-poverty measures earmarked for Aboriginal advancement in education.
- No guidance was found on subject matter focus, employment expectations, or skills gaps.

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CONTEXT

The United Nations estimates that there are over 370 million indigenous people globally, spread across over 70 countries. (9) In Canada, our approximately 3100 reserves are home to less than half of our 1.4 million Aboriginal citizens, who constitute one of the fastest growing and youngest segments both of our society. (10) Yet many Aboriginal communities in this country are characterized by deep poverty, high unemployment rates, substance abuse, suicide ideation, and domestic violence. (11) In recent years, Canada has ranked between 6th and 8th on the UN Human Development Index, while our Aboriginal communities fall between 63rd and 78th. The federal government's Community Well-Being Index shows that the gap has not changed at all since 1981. (12)

These struggles are deterministically linked to a proportional underrepresentation of Aboriginal people in formal higher education, a trend recapitulated worldwide, as the global decolonization process progresses at variable rates. (11) Formal education leads to better employment opportunities, improved coping skills, and better participation in social institutions: (13) advantages largely denied many Aboriginal Canadians. Addressing the education gap is therefore a key component to any strategy for improving the prosperity, health, and well-being, and reducing the marginalization, of our indigenous population.

It is possible that the history and processes of colonization have suppressed indigenous knowledge systems, especially language and culture, thus contributing to the low levels of educational attainment and high rates of social issues, such as suicide, incarceration, unemployment, and separation. (14) Any progress on this front, some argue, must include an aspect of harmonizing surviving indigenous knowledge traditions with 21st century mainstream educational tenets, (15) a process completely untried in any formal sense.

What is often overlooked when considering the Aboriginal education gap is that improving the social and economic well-being of this population is also a sound investment in Canada's economic future. (16) Closing the gap is, in the words of Barrie McKenna, "a clear economic winner. Any investment made by Canada to improve the educational outcomes of Aboriginal youth is likely to reap considerable dividends, including higher GDP growth, lower unemployment, increased tax revenue and reduced demand for health and social services." (17)

By some analyses, Canada's indigenous population will be essential in mitigating the looming long-term labour shortage caused by this country's aging population and low birth rate. (16) According to one study, closing the Aboriginal educational gap—and therefore the labour market outcomes gap—by 2026 would result in economic gains of the order of \$500 billion. (16)

Clearly, devising policies to ameliorate Aboriginal underrepresentation in higher education is an essential task, not just for moral reasons, but for helping to assure that Canada thrives in the evolving global economy.

In Canada, the responsibility for Aboriginal education is shared by the federal and provincial governments, as well as with a handful of Aboriginal organizations. The Ontario Ministry of Education's Aboriginal Education Strategy is built upon a policy framework that describes the goals of most provinces: to boost Aboriginal student achievement, to close the gap between Aboriginal and non-Aboriginal educational achievement, and to increase public confidence in publicly funded education. (18)

The focus tends to be on increasing the presence of Aboriginal staff and teachers, to improve the visibility of highly educated Aboriginals as role models, as well as on producing curriculum for mainstream Canadian education that is reflective of Aboriginal experiences. Success in these initiatives is variable. In addition, efforts to make non-Aboriginal teachers aware of the particular learning styles and needs of Aboriginal students are underway. (18)

Policies embraced or proposed by other actors, such as the Assembly of First Nations, advocate for the integration of anti-violence messaging into educational practices. [4] And the Council of Ministers of Education stresses the need to measure outcomes, and to improve the data collection infrastructure to allow such ongoing measurements. (19)

Opportunities for enhancing Aboriginal participation in higher education is an area of research that is markedly under explored, especially as it relates to Canada's wider participation in the global economy. Studies tend to examine the struggles of Aboriginals in accessing basic services and are usually contextualized as a social tragedy. But the Aboriginal education gap is not merely a human rights issue, but an economic one. To quote a commissioned report, "Not only would [educational improvement] significantly increase the personal well-being of Aboriginal Canadians, but it would also contribute somewhat to alleviating two of the most pressing challenges facing the Canadian economy: slower labour force growth and lackluster labour productivity growth." (20)

While studies have addressed the general crisis of comparatively poor Aboriginal education, the areas least explored are: (a) the extent to which the geographical, cultural, and linguistic diversity of Aboriginal people can be used to enhance Canadian education as a whole; (14) (b) the extent to which the sharing of governance responsibilities for Aboriginal education, between various levels of government, helps or hinders effective educational service delivery; (14) (c) the potential productivity and competitive gains to the Canadian economy afforded by improvements in Aboriginal education; (20) (d) the extent to which Aboriginal childhood experiences manifest as adult educational barriers; (21) (e) assessing and measuring deterministic barriers to success, such as transitions between school systems and actual campus environments; (19) (f) the interplay between Aboriginal access to education and other social determinants, including violence, poverty, racism, and addiction; and (g) the devising of specific policy directives for various actors, including government, to best position Aboriginal education in a wider, competitive global context.

The present project synthesizes the knowledge of, and provide critical insights into, Canadian Aboriginals' perceptions of their educational challenges. Our intent was to explore the following general ideas:

1. What are the current challenges, barriers, and opportunities for Canadian Aboriginal people to accessing post-secondary education, with particular attention paid to educational barriers and opportunities for Aboriginal engagement in the global economy?
2. What are the opportunities for integrating Aboriginal educational practices and experiences into the Canadian global economic strategy, given the unique workforce and skills set characteristics represented by Canadian Aboriginals? Are such opportunities likely to result in measurable prosperity for Aboriginal communities?
3. What are the best practices and governmental policy options for maximizing inclusion of Aboriginal individuals in both higher education and resulting employment?

APPROACH

This study is the product of a systematic review of published literature with a qualitative knowledge synthesis. The peer-reviewed published literature was explored for relevance to our primary, Canada-centric research questions, while a parallel investigation of grey (i.e., non-peer reviewed) literature was conducted in a non-systematic fashion to elucidate wider perspectives on relevant matters, mostly global in scope.

A systematic approach was conducted to search published peer-review bibliographic databases. These included the Web of Science, Embase (through OVID), PsycINFO (through OVID), MEDLINE (through OVID), and CINAHL (through EBSCO), and Scopus. Search strategy was developed through a consultation with an information specialist. To address the research questions in a sensitive approach which aims to capture all relevant literature; two search strategies combined with the Boolean 'OR', both were limited to results from 2000 until 2017, to the publications concerned with Canada, and to English language.

First search parameter covered the question of indigenous population and education: ((aboriginal* OR native* OR indigenous OR inuit* OR metis OR "first nation") AND (education OR post-secondary OR "post secondary" OR university OR college OR diploma OR medicine OR dentistry OR doctor* OR master OR bachelor) AND (barrier* OR challenge* OR hurdle* OR obstacle* OR hardship* OR oppertunit* OR potential)).

Second search parameter covered the question of indigenous population and employment: ((aboriginal* OR native* OR indigenous OR inuit* OR metis OR "first nation") AND (job or workforce or employment) AND (barrier* OR challenge* OR hurdle* OR obstacle* OR hardship*)). After removing duplicates, a total of 1,341 citations were retrieved. Supplemental literature was to be added through searching the references of included studies.

A parallel search of grey literature (i.e., non-peer reviewed literature) was conducted through a Google (www.google.ca) search.

Inclusion/Exclusion Criteria

Retrieved citations, of any study design, would be included in the systematic review if the study conformed to all of the following selection criteria:

- The population of focus was identified are Aboriginal or indigenous, identified thusly via overt statements pertaining to their status, as guided by the keywords listed above.
- The primary interest of the selected studies was barriers to participation in post-secondary education.

- The secondary interest of selected studies was opportunities for integrating Aboriginal educational practices and experiences.
- The tertiary interest of selected studies was policies aimed to increase inclusion of Aboriginal individuals in higher education leading to employment.
- The context of study was post-secondary education in Canada
- As well, only published peer-reviewed articles whose full texts were available were included.

Review Process

There were two levels of citation screening. Two independent reviewers, GJ and MU, screened all retrieved citations. At the first screening level, titles and abstracts were screened for relevance to the research questions. Studies were included at this level if they seemed likely to include empirical data to answer one or more of the three research questions. In the second level screening, citations that were deemed relevant had the full-text screened against the established selection criteria. Any discrepancy between the two reviewers was addressed through adjudication by a third reviewer (RD).

Data abstraction

Any and all themes and quotations relevant to one or more of the three stated research questions were collected. In addition, we collected relevant study characteristics (publication date, geographical information, study design, study objective, and number of study participants), characteristics of the study participants (demographic, ethnicities, societal role), and context information (professional setting, type of post-secondary education targeted, type of employment targeted). Data abstraction was conducted in duplicate by two reviewers (GJ and MU). In the event that the abstracted results were significantly heterogeneous, a third reviewer (RD) served as an independent adjudicator.

Study quality

Since this systematic review was open to any study design that addressed the proposed research questions, a variety of evaluation techniques were possible. However, to provide a consistent approach throughout the process, reviewers were instructed to assess the quality of the included studies based on the following four parameters, which are described in greater detail below: credibility, transferability, dependability, and confirmability.

Credibility: Did the authors of the included study evaluate whether the representation of their data reflect the views of the study participants accurately? Techniques that authors of included studies could have used include, but are not restricted to: members check, duplicate data analysis by an independent researcher, persistent observation, verbatim quotes, peer debriefing, attention

to negative cases. The credibility criterion is based on whether any of these techniques were transparently applied.

Transferability: Did the study provide sufficient details regarding study participants and contextual background information to help evaluate if the research findings are transferable to other settings?

Dependability: Did the authors of the included study evaluate whether their research process was logical, traceable, and clearly documented? Techniques that authors of included studies could have used include, but are not restricted to: calculation of inter-rater agreements, use of different methodological approaches to assess topic of research (context triangulation), reflexivity, audit trials, debriefing, and peer review. The dependability criterion is based on whether any of these techniques were transparently applied.

Confirmability: Did the authors of the included study evaluate the extent to which findings are qualitatively confirmable? Techniques that the authors could have used include: providing detailed reasons for the applicability of a chosen school of thought; providing information about their own backgrounds and potential biases; and providing a detailed description of their personal perspectives, perhaps including a reflexivity statement. The confirmability criterion is based on whether any of these techniques were transparently applied.

Studies that are deemed to be low quality were still included in our analysis. However, these studies are noted as such and carry less weight on informing the overall results than do studies that we deemed as being of high quality.

Analysis

Data were extracted on the context of the study, the participants, the study design and methods utilized, as well as the findings relevant to our research questions. We employed contextual and thematic analysis of these extracted quotations. Upon initial examination of the data, we established codes to indicate potential areas of interest. This process was conducted independently by two reviewers (MU and RD). Themes and sub-themes that arose from each reviewer's analysis were discussed and a consensus was reached. Results from the grey literature did not inform the thematic analysis. Instead, these results were used to provide contextualization, and were used as a potential indicator of publication bias (where grey literature is based in data and information not available in the peer-reviewed literature).

RESULTS

Out of the six bibliographical databases searched, we retrieved 1,871 citations. After conducting first level screening of title and abstract, a total of 137 citations were deemed relevant and the full-texts of these citations were retrieved. Second level screening of these citations resulted in 8 articles that fit our selection criteria and are included in this systematic review. Of the excluded studies, 83 were excluded due to different research topic interest, 36 due to different context, 5 due to different study population, and 5 due to other reasons (duplicate or failure to retrieve full-text). Figure 1 below provides a flow diagram of the screening process.

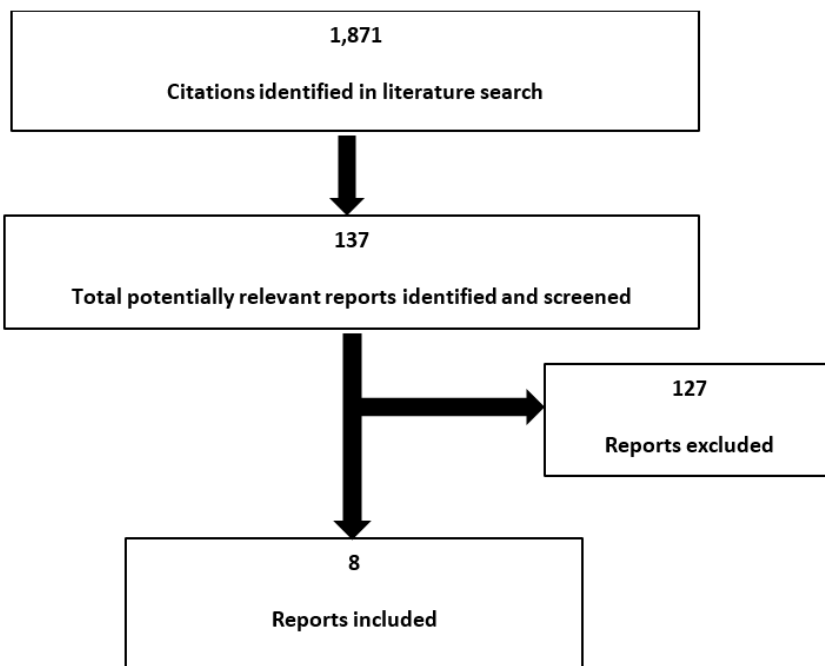


Figure 1- Flow of Search Process

Study Characteristics

Although our search strategy covered the last 17 years of peer-reviewed publications, all of the included studies were published within the last 10 years. Seven out of the eight included studies provided data to address our first research question (“What are the current challenges, barriers, and opportunities for Canadian Aboriginal people to accessing post-secondary education”).(1-5, 7, 8) However, none of the included studies provided data to address our second research question (“What are the opportunities for integrating Aboriginal educational practices and experiences into the Canadian global economic strategy”). But all of the included studies provided some insight to our third research question (“What are the best practices and

governmental policy options for maximizing inclusion of Aboriginal individuals in both higher education and resulting employment?”)

These studies were conducted in various geographical locations across Canada. Specifically, one study recruited participants from the Atlantic provinces;(8) one recruited participants from Prince Edward Island, Quebec, and Ontario;(7) three recruited participants from Ontario;(1, 3, 6) one study recruited participants from Manitoba;(2) and two studies recruited participants from British Columbia.(4, 5)

The included studies varied in terms of their study designs. Most frequently, the authors reported using a qualitative analysis of unstructured, in-depth, or open-ended interviews.(1, 4, 5, 7) A review of the quality of the included studies showed that all of them employed a measure that indicated satisfactory credibility, dependability, and confirmability. However, transferability was a concern in six of the included studies, largely due to lack of reporting on the characteristics of the study participants.(1, 3-6, 8)

The objectives of each included study were not consistent and were framed variably. However, the overall theme of all studies included the exploration of barriers that face Aboriginal peoples in their post-secondary educational journey, as well as how can those barriers could be overcome.

Seven out of the eight included studies drew directly from the insights of Aboriginal post-secondary students themselves;(1-4, 6-8) whereas one study drew from the perspectives of prospective Aboriginal post-secondary students. In addition to students, one study included staff members,(4) and another included both staff members and Aboriginal elders.(3) The number of participants in the included studies ranged from 7 to 74 study subjects.

There was paucity of information with regard to the demographics of participants. Four studies reported on the proportion of female participants, showing one study to have had all-male participants,(6) one study with all female participants,(1) and two studies with 78 to 79% female participants.(2, 7) Only one study reported on participants age, with an average of the participants to be 31 years of age.

Barriers to Participating in Post-Secondary Education

We identified five repetitive themes describing barriers to post-secondary education for Aboriginal people. These were:

1) Fear of loss of identity

Amongst most participants in two of the included studies, the fear of losing their connection to their home communities and of being pressured to abandon the Native ways of thinking and acting were major hurdles in their attempts to fulfill their educational goals.(1, 3)

Bingham, 2014, page 620, of a student participant: *“I lost myself when I came here. I am not me anymore—the way I would be when I was at home—and I do not like the way it feels. It feels like I have no culture. Participant 20”*(1)

Erwin, 2015, page 55, of a student participant: *“[...] constantly must be aware of [...] what environment I am in. Am I with the common community? Am I with the Anishanabe people? [...] Who’s around? [...] If they’re my friend, then I have to be this way. When I’m in the classroom, I have to do this. When I’m with schoolmates, I have to be this way. When it’s Friday night, I have to be this way. When it’s Sunday morning, I have to be this way. [T]hey’re constantly working.”*(3)

2) Fear of estrangement

A general feeling of apprehension regarding moving away from home into a large urban community, a concern of loss of the social support network, and worry about fitting into the new environment were feelings expressed by Aboriginal students in four of the included studies.(1, 3, 4, 8)

Erwin, 2015, page 56, of a student participant: *“[...] culture shock. It’s a whole different world [...]. I don’t think [...] [non Aboriginal peoples] can completely grasp [...] what it means to leave a reserve [and] go into a city. I don’t think anybody really understands [...] unless you are connected to that [...]. [My husband’s] cousins and nieces and nephews who are old enough to leave and go to school, most of them fail the first year because [...] it’s a different world [...] going from the reserve life to city life. There’s no comparison between the two. We speak differently. We act differently. We talk differently. We think differently. So [...] it’s a huge culture shock”*(3).

Erwin, 2015, page 56, of an Elder participant: *“[...] leaving your home reserve where you felt safe and valued and [...] part of a community life and [...] enter[ing] a college system that is totally foreign to anything that you have ever, ever experienced [...] can be pretty daunting for some [...] of our Aboriginal students so they sometimes drop out for those reasons.*(3)

Timmons, 2013, page 235, of a student participant: *“Coming in from a community which is like 10,000 and then coming into a university which is double the population of my community, it’s been a really big transition”*.(8)

3) Negative attitude from non-Aboriginal individuals

Fear of both a lack of respect for Aboriginal traditional ways and expectation of racism were identified as barriers to seeking post-secondary education in three of the included studies.(4, 5, 8)

Oloo, 2007, page 93-94: *"In my class presentation, I brought in a circle. The professor made sarcastic remarks, 'Oh, are we going to hold hands?' ... 'Are you done with your circle?' I felt that my culture is not honoured"*(4)

Rodon, 2015, page 109, of study authors: *"Adapting to higher education standards and overcoming the latent institutional racism were also identified as important challenges by several workshop participants"*(7)

4) Finance and funding

The inability to make ends meet and a lack of sufficient funding to Aboriginal support programs were identified as significant barriers preventing Aboriginal participation in higher education in four of the included studies.(1, 2, 7, 8)

Timmons, 2013, page 234, of a student participant: *"[Funding] has been the same amount for the past ten years and it's not keeping up with the inflation at all.. . supposed to include our rent, our bills, our transportation, our everything, and I find it's very hard to work with."*(8)

5) Family responsibilities

Four of the included studies identify family responsibilities as a hurdle to the continuous education. Especially considering that many Aboriginal learners decide to join post-secondary education after the start a family.(1, 2, 7, 8)

Bonnycastle, 2011, Page 12-13, of study's authors: *"Post-secondary education institutions fail all students-and particularly Aboriginal women students-when they position campus and community childcare services as peripheral to the education mandate, and fail to accommodate the caregiving needs of their students. Few university presidents would deny a campus library is an essential tool for student learning, yet the parallel argument for childcare services has yet to be made"*

Policy Opportunities for Overcoming Educational Barriers:

Similarly, five policy themes emerged as opportunities to help address the aforementioned identified barriers. They were:

- 1) Access to indigenous knowledge at post-secondary education institutes; this has been identified in five of the included studies.(3, 4, 6-8)

The presence of programs, role models, images, and curriculum representative of the Canadian Aboriginal experience may prove to be a welcoming element on college and university campuses, helping to assuage prospective students' fears of cultural isolation, alienation, and

abuse. This theme includes the presence of counseling services tailored specifically to the needs of indigenous peoples, who have specific mental health needs and challenges. As one student offered:

"The Native Counselling Unit has been a great source of support for me at this university." (8)

- 2) Increase awareness of Aboriginal peoples at post-secondary education institutes; this has been identified in five of the included studies.(3, 4, 6-8)

A visible presence of Aboriginal students on campuses, not just of programs and institutions, can help to create a welcoming environment conducive to both individual pride and scholastic participation. Several studies cited students' expressions of relief at recognizing familiar cultural tropes and overt efforts to accommodate their accommodation needs. One student, opining about the dedicated Native Lounge at his institution, said:

"If it weren't for other Native students... I don't think I would have survived." (8)

- 3) Establish and increase support to existing programs that offer support targeted to Aboriginal peoples; this has been identified in all of the included studies.(1-8)

Beyond student groups and scholastic programs targeted to Aboriginal needs, there is a role to be played by encouraging the creation of an accepting campus, not solely for Aboriginal students, but for all learners from distinct cultural backgrounds. With the rise of mental health challenges on campuses, the creation of retreats and spaces for the reinforcement of social cohesion could produce a sense of welcoming leading to reduced drop-out rates.

"All First Nations student participants spoke of the need for a safe place, a stand-alone location or haven to which they could retreat to avoid the disorienting sense of 'disconnect' at the college." (3)

- 4) Actively encourage the creation of Aboriginal student clubs and associations which can offer peer and community support; this has been identified in five of the included studies.(3, 5-8)

Several of the policies relate not to the attraction of students to colleges and universities, but to their retention. There is a sense that poor study completion rates are associated with an overall paucity of community support. Thus, many of these policy recommendations have some conceptual overlap. Whether it's the creation of safe spaces, student clubs, Aboriginal programs, or a general sense of community acceptance, the intent is to inculcate campuses with multiple characteristics of a generally accepting community. As one student said, about the new community encountered on campus:

"I find we're kind of like a big family, you know, and if you have a problem or a question you can go to pretty much anyone and ask them, they'd be more than happy to help you."
(8)

5) Increase funding to Aboriginal educational incentives and programs; this has been identified in four of the included studies.(2, 5, 7, 8)

This is a direct policy solution that governments and universities can enact in short order. A commitment to fund scholarship programs for direct financial support of students can help overcome the single largest social determinant of educational, and thus economic, participation: personal and familial poverty.

Furthermore, the funding of programs intended to assist in the housing, transportation, and settlement of Aboriginal youth who have chosen to pursue studies far from their home communities, is a programmatic amelioration that can pay dividends both immediately and in the long term.

"One participant explained that he felt he had to choose whether to 'give up an education for [his] home or give up [his] home for education'." (7)

IMPLICATIONS

A recurring, but not surprising, theme arising from both the grey literature and extracted peer-reviewed studies was that Aboriginal learners experience high levels of anxiety concerning the move from traditional communities to college or university campuses. This is not unlike observations made of college-age students across all cultures in North America; studies consistently find that anxiety is the most common mental health diagnosis among this demographic. (22) These experiences not unlike those of any racial or ethnic minority seeking purchase in a new environment. But studies have shown that visible minorities are least able to find easy social integration in new societies. (23)

Among visible minorities, though, Aboriginals in Canada experience a unique burden, due to their historic political challenges and ongoing marginalization in all levels of society. It is not surprising that such marginalization would continue to be felt within the educational domain, as well. Chronic stress and mental health concerns have been well documented among Canadian Aboriginals attempting to find social purchase among non-Aboriginals, particularly in circumstances where rural dwellers seek integration in an urban environment. (24) Our nation's present crisis of suicide ideation among Aboriginal youth is in part a manifestation of this particular stress pathway. (25). As one researcher notes, "the idea of personal and cultural continuity is essential to understanding suicide among First Nations youth." (25). Cultural continuity, or its lack, is a theme that re-emerged in our analysis of educational obstacles.

It is important to note that these integrative experiences, whose broad nature and high prevalence are presently specific to the Aboriginal case, are a worldwide phenomenon among first peoples in many nations. "Culture and belonging are key components of identity" (26), thus the underlying cause of poor integration, whether it is within a larger social context or specific to college campuses, "is not being indigenous but coping with losses secondary to colonisation." (26) And as colonisation was a policy directive, so can further policy directives serve to address the identified deleterious experiences.

The motivation for conducting this review was to seek policy pathways to leverage unexpressed Aboriginal skill in furtherance of the Canadian global economic agenda. The argument is that Canadian Aboriginals, who constitute our youngest and fastest growing demographic (27), represent an unrealized economic asset that must first be refined via higher education. Other OECD nations, such as Australia, have recognized this potential. That nation's Centre for Aboriginal Economic Policy Research suggests that culturally-biased evaluations and circumstances create an environment for Aboriginal underperformance; and that a tendency to stream Aboriginal students toward arts and education careers, rather than business, engineering, and science, can serve to exacerbate socioeconomic divides between Aboriginals and non-Aboriginals, (28) while also slowing the potential for this population to exert its power on the global economic stage.

An Australian systematic review with similar goals to the present study (29) found that a lack of career guidance is a barrier preventing indigenous peoples from pursuing and thriving in higher education. Like the results from our Canadian review, they found that cultural unfamiliarity, fear

of exclusion, and issues with social integration were further barriers. (29) They further found that financial support, the visible presence of indigenous centres and programs, and community encouragement were enablers to Aboriginal educational success (29), again echoing our conclusions.

While our results fall short of offering specific policy guidance for immediately leveraging Aboriginal expertise to serve Canada's global economic agenda, we suggest instead that seeking to reduce barriers to Aboriginal participation in higher education will ultimately enable the cultivation of Aboriginal people's talents for a longer term application in service of this nation's economic needs. Policies that are perceived to be most effective in reducing those barriers focus on two broad areas: making educational centres more welcoming to Aboriginal learners, and providing financial assistance to low income Aboriginal students.

FURTHER RESEARCH

Further research is indicated in terms of the collection of additional perspectives and through the evaluation of pilot projects seeking to address Aboriginal educational shortfalls. Our study suffered from a dearth of expert opinion relating specifically to directives for inclusion of Aboriginal workers in the global economy. Additional research overtly seeking to elucidate short- and long term governmental strategies for integration of a national Aboriginal education strategy with the nation's grander economic scheme would be well received.

Our results suggest a perceived value in the funding of ameliorative programs for improving campuses' welcoming nature, scholarships for Aboriginal students, and endowed Aboriginal-focused programs within universities and scholarships. Extant initiatives have not been well evaluated, in terms of process indicators, qualitative perceptions of value, and both economic and social impact. Such evaluative research would be a valuable guide for policy makers seeking to make immediate positive changes.

KNOWLEDGE MOBILIZATION

Our Knowledge Mobilization (KM) is multifaceted and comprises the following steps:

- We are in the process of converting this report to a format suitable for submission to a peer-reviewed journal.
- We are submitting abstracts arising from this work to selected academic conferences (the Canadian Conference on Global Health and Canadian Public Health Conference)
- This report and any publications arising from it will be made freely available on the researchers' websites, and in the permanent open research repository of the University of Ottawa.
- We are preparing a summary of these findings in PowerPoint format, to be made freely available on the researchers' websites.
- The findings of this report will be discussed on the public, free podcast hosted by Dr Raywat Deonandan, called "Science Monkey" (www.sciencemonkey.ca)
- The findings of this report will be written up as a lay article for Dr Raywat Deonandan's regular column in *The Huffington Post Canada*

CONCLUSION

The published evidence suggests that Canadian Aboriginals have deeply felt concerns about their ability to access post-secondary education. Empowering Aboriginal Canadians to seek higher education is a potent policy path for leveraging the innate talents of this growing demographic for the furtherance of Canada's global economic agenda.

Echoing similar findings in other OECD countries with sizable Aboriginal populations, we found that Aboriginal learners feel trepidation about finding social purchase on the campuses of higher education, while experiencing acute financial barriers to their participation. Therefore, there is a viable twofold path forward: strive to make campuses more inclusive and welcoming to Aboriginal learners; and invest in scholarship and financing programs to help low income Aboriginals, particularly remote and rural ones, access the benefits of post-secondary education.

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