What Works, Why, and How? The Effect of Educational Interventions on Health Professional Learners' Causal Beliefs and Attitudes Towards Indigenous Peoples' Experiences with Historical and Ongoing Colonialism

by

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I dedicate this dissertation to my son. As you grow, my hope is that you learn that change is possible, and that reconciliation requires all of us to resist, speak up and act for a more inclusive, just and equitable society.

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Abstract

Racism towards Indigenous Peoples continues to exist in the Canadian healthcare system, with potentially fatal outcomes. Given the historical and ongoing effects of colonialism in Canada, the Truth and Reconciliation Commission (TRC) specifically called for anti-racism and cultural competency as one pathway towards achieving health equity for Indigenous Peoples. Yet, we know little about the design, delivery and effectiveness of such strategies in terms of changing beliefs, attitudes and behaviours towards Indigenous Peoples.

This dissertation is comprised of two integrated manuscripts, bookended by introduction and discussion chapters. The first manuscript evaluates the effect of an Indigenous health curriculum on health professional learners' beliefs, attitudes, support for government assistance to reduce inequities, and professional responsibility to address inequities in Canada. The second manuscript scans the literature to map and analyze the current research landscape of educational interventions regarding the historical and ongoing effects of colonization in Canada, as well as in other countries that share similar colonial histories (i.e., the United States, Australia and New Zealand). It also reports on the common evaluation methods used and the short- and long-term outcomes of educational interventions in those countries.

Together, these manuscripts contribute knowledge pertaining to the intended and unintended consequences of Indigenous-specific educational interventions on health professional learners' beliefs and attitudes. They also contribute to the perceived need for change, as well as the theoretical and evaluation design considerations of educational interventions that focus on the root causes of Indigenous Peoples' inequities given the Truth and Reconciliation Commission's Calls to Action on anti-racism and cultural competency training.

Statement

I, Carolyn Marie Melro, acknowledge that this dissertation includes integrated manuscripts that evolved as a result of collaborative endeavours with my supervisory team. In these manuscripts, the primary intellectual contributions were made by me, the first author who led: a) the design and execution of the studies (e.g., literature reviews, participant recruitment, development of data collection tools); b) the data analysis/synthesis; and c) the writing of the manuscripts. The contributions of Dr. Kim Matheson & Dr. Amy Bombay were primarily through supervision of the research, theoretical and methodological guidance, and intellectual and editorial support in crafting manuscripts for publication. Ms. Jyllenna Landry offered research assistance and editorial support in preparing a manuscript (Chapter 5 of this dissertation) for publication. As members of the supervisory committee and research assistant staff are acknowledged as co-authors for the purpose of publication, the manuscripts (Chapters 4 and 5 of this dissertation) are written in the first-person plural voice (i.e., we and our).

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my role model in life. I can only hope to be a fraction of the person and mother that you are. Tyler, as I reflect upon the purpose of my work, I realize that you were instrumental in opening my eyes to unearth the complexity and realities of our assumptions and our ideologies that Canada is a fair and just country.

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Chapter 1: Introduction

Globally, health and social inequities continue to exist, especially among different ethnoracial groups (Uphoff & Pickett, 2018). A wide range of health measures provide ample evidence of these inequities, including access to health and social services (Chiu et al., 2021; Mahabir et al., 2021), COVID-19 rates (Jensen et al., 2021; Thakur et al., 2020), rates of hypertension and diabetes, and lower life expectancies (Kim, 2019). Health and social inequities reflect systematic differences in opportunities between groups, leading to unfair and avoidable differences in health and social outcomes (World Health Organization, 2018). The dimensions of social identity and social location act together to contribute to differential access to opportunities based on ethnoracial status, gender, socioeconomic status, and geography, among other social determinants. Social determinants of health positively or negatively influence the health and social status of populations (Reading & Wien, 2009). Further, when it comes to health and social outcomes the intersecting effects of social identities (e.g., gender, ethnoracial socioeconomic status) produce compounding positive or negative health effects. For instance, Indigenous women in Canada experience higher rates of violence compared to non-Indigenous women. As such, the root causes of inequities faced by Indigenous Peoples are diverse, complex, evolving, and interdependent in nature. To address health and social inequities requires an understanding of the underlying causes and conditions that influence the social determinants of health to inform equally complex and interconnected interventions in order to promote health and social equity.

In Canada, inequities continue to negatively affect Indigenous Peoples in comparison to non-Indigenous Canadians (Adelson, 2005). The term ‘Indigenous’ is used to broadly refer to the Original Peoples of a particular territory. For context, the data obtained for this dissertation was researched in what is now known as Canada, and thus the term ‘Indigenous’ in this study

collectively refers to three distinct sovereign Peoples who are Indigenous to this territory: First Nations, Inuit, and Métis. All three groups underwent colonization and the imposition of colonial institutions and systems resulting in the losses of land, language and sociocultural resources, while experiencing racism, discrimination and social exclusion (Reading & Wien, 2009).

Before describing the historical and ongoing colonial context of Canada (which is required for non-Indigenous people to understand the link between colonialism and inequities towards Indigenous Peoples), it is important to emphasize the perseverance and strengths of Indigenous Peoples (Royal Commission on Aboriginal Peoples, 1996; Truth and Reconciliation Commission [TRC], 2015; National Inquiry into Missing and Murdered Indigenous Women and Girls, 2021). Prior to European contact, there is evidence to suggest that Indigenous communities were egalitarian and drew on a rich history of spiritual traditions that was underlined by the value in relationality (Absolon, 1994; Kirmayer et al., 1998; Mussell et al., 1993; Settee, 2011). Focusing on the strengths of Indigenous Peoples has important political and social objectives, but it risks ignoring the structural causes of Indigenous health inequities with their roots in colonialism and related policies (Askew et al., 2020; Bryant et al., 2021; Fogarty et al., 2018). In this regard, a strength-based approach can consolidate some of the same problematic thinking that governs and oppresses Indigenous Peoples' lives (Askew et al., 2020; Fogarty et al., 2018). As such, vigilance is needed to avoid replacing negative stereotypes with a new set of positive ones (e.g., Indigenous Peoples are noble). Given the complexity of Indigenous Peoples' experiences, we begin by understanding the root causes of such inequities so that we can better understand why Indigenous Peoples have persevered despite adversity.

1.1. Historical and Ongoing Colonial Context of Canada

Given the Royal Commission on Aboriginal Peoples (1996), the Truth and Reconciliation Commission (TRC) report (2015), the final report of the Murdered and Missing Indigenous Women and Girls (MMIWG) inquiry (2021), along with the discoveries of unmarked graves at Indian Residential Schools (Cooper, 2022), the Canadian public has become increasingly aware of the historical and ongoing harms of colonialism in Canada. Indian Residential Schools operated in Canada for more than 160 years, with 150,000 Indigenous children removed from their families and communities with the intent to control and assimilate Indigenous Peoples into dominant Euro-Christian society (TRC, 2015). As the Government of Canada began phasing out residential schools in the 1950s and 1960s, they diverted their efforts to "scooping" Indigenous babies and children from their mothers with thousands of Indigenous children being taken away from their families and homes (Sinclair, 2007). This has become known as the "Sixties Scoop" and has continued into the contemporary setting known as the "Millennial Scoop". This dissertation is not meant to document the multiple historical and ongoing abuses experienced by Indigenous Peoples, but to demonstrate the long-term oppression of Indigenous Peoples which has continued to affect generations through what has been referred to as 'intergenerational trauma' (Bombay et al., 2009). As such, it is imperative that non-Indigenous Canadians understand the historical and ongoing colonial harm leading to intergenerational trauma and how it intersects with the structural determinants of health to advance reconciliation in Canada as negative attitudes (e.g., prejudice, stereotypes) which have also been intergenerationally passed down (Allan & Smylie, 2015).

The TRC released its final report in 2015 highlighting the persistent harmful effects of the Indian Residential Schools on Indigenous Peoples and communities. The final report by MMIWG was released in 2021 following the lead of the TRC by addressing and illuminating the

intergenerational effects of colonial violence (National Inquiry into Missing and Murdered Indigenous Women and Girls, 2021). In these reports, the cumulative effects of trauma that are transferred across generations were illuminated, demonstrating the causal link between colonial violence and contemporary inequities between Indigenous and non-Indigenous peoples (Bombay et al., 2014). As Bombay et al. (2014) identified, in order to adequately address intergenerational trauma, we must understand that "history provides a context for understanding individuals' present circumstances, and it is an essential part of the healing process" (p.333). This statement generally means that we need to recognize the ways that the historical treatment of Indigenous Peoples continues to influence the present circumstances through intergenerational trauma.

In order to foster reconciliation and healing of Indigenous Peoples and communities, we must understand why we need reconciliation in Canada, which means grappling with historical and contemporary practices of genocide, attempts at cultural extinguishment, physical displacement, land appropriation, resource theft, economic impoverishment, coerced labour, educational deprivation, treaty violations, absent and inappropriate healthcare, harm through legal systems, and media misrepresentation. Without this understanding of colonization causing historical and intergenerational trauma, non-Indigenous peoples may blame Indigenous Peoples for poor health and social outcomes (Environics Institute, 2019). The resultant anti-Indigenous racism may lead to providing second-class healthcare to Indigenous Peoples (Allan & Smylie, 2015). Contemporary issues such as media attention to unmarked burial sites at Indian Residential Schools provides a vivid and ongoing context that highlights the harmful policies and resulting trauma experienced by Indigenous Peoples and communities in Canada. It also highlights the ongoing ideological processes of colonialism, as settlers debate whether these burial sites exist.

1.2. Understanding Causes and Conditions that Influence the Structural Determinants of Health of Indigenous Peoples

Unfortunately, the gap in the health and well-being of Indigenous Peoples in Canada, alongside the second-class treatment they receive within the healthcare system, continues to this day (Allan and Smylie, 2015). Two contemporary examples demonstrate the significant consequences and the urgency of anti-racism strategies and interventions in order to address biases within the healthcare system. The experiences of Brian Sinclair and Joyce Echaquan, Indigenous patients who died in hospitals in Manitoba and Quebec, respectively, highlight the effects of stereotyping and racism in healthcare. Mr. Sinclair was referred to the emergency room for having a blocked catheter. Healthcare staff working in the emergency room dismissed Sinclair's distress, assuming he was a drunk, poor homeless Indigenous man seeking shelter. Ms. Echaquan was experiencing stomach pain, but healthcare professionals assumed she was in *withdrawal from illegal drugs, stupid, only good for sex, and would be better off dead* (Cecco, 2020). These were the remarks shown in a Facebook Live video filmed by Ms. Echaquan moments before dying. Both Mr. Sinclair and Ms. Echaqaun received inadequate treatment, effectively victims who died as a result of systemic anti-Indigenous racism.

It is necessary to understand the interrelated features and relationships of the structural determinants of health on Indigenous Peoples' health as it is shaped by historical, political, societal, and economic factors. Reading and Wien (2009) grouped the structural determinants of health into three categories of determinants: proximal, intermediate and distal. Proximal determinants represent health *behaviours* and must be considered within the sociopolitical context of Indigenous Peoples' lives. An individualistic perspective predominates this analysis of the causes of group outcomes (Reading, 2018); as such, this could lead to victim-blaming attitudes

towards Indigenous Peoples for their health and social outcomes. The intermediate determinants are the *systems* that connect the proximal and distal determinants of health such as healthcare systems, education systems, and political systems (Reading & Wien, 2009). These systems are linked to either facilitating or hindering health and social outcomes. Distal determinants represent the *sociopolitical/colonial* factors (i.e., historical, political, economic, and societal factors) that create all determinants of health. Distal determinants can be further categorized into historical (e.g., Indian Residential Schools, Sixties Scoop) and ongoing (e.g., Indian Act, lack of healthcare and social funding) structures of colonialism. Given the historical and ongoing colonization of Indigenous Peoples in Canada, the root causes of inequities they experience can be attributed, in part, to these distal determinants of health. Yet, those who are non-Indigenous often express victim-blaming attitudes (proximal determinants) towards the health and social outcomes of Indigenous Peoples (Allan & Smylie, 2015; Environics Institute, 2019; Godlewska et al., 2020).

1.3. Causal Beliefs (Attributions) of Indigenous Peoples' Inequities

It is essential to understand non-Indigenous Canadians' beliefs about health and social inequities, particularly their causal attributions for these inequities, because if they do not perceive themselves as potentially contributing to inequities, they may not take responsibility to be part of the solution to rectify inequities and achieve reconciliation. According to attribution theory (beliefs about the causes of individuals' health and social outcomes), non-Indigenous Canadians may perceive the causes of health and social inequities to reflect intrinsic features of Indigenous Peoples (e.g., genetics, laziness, lack of intelligence, carelessness). Alternately, they might perceive the causes to rest in the social, political and economic contexts of colonialism, namely the social and structural determinants of inequities (e.g., governmental policies, lack of access to healthcare and social programming). When people perceive the causes of health and social behaviours to reside

within individuals (rather than in their sociopolitical environment), a group's outcome is often linked to individual failures (e.g., lazy; Kluegel & Smith, 1986). This is related to the structural determinants of health framework because when people rely on the proximal determinants of health (e.g., intrinsic features of Indigenous Peoples) rather than relying on the intermediate or distal determinants (e.g., sociopolitical/colonial factors) individuals may develop victim-blaming attitudes toward the causes of Indigenous Peoples' inequities.

Causal attribution theory attempts to understand how people explain the causes of a person's behaviour or group's outcome (Braun et al., 2020). Research has shown that the causal explanations can be influenced by stereotypes (Reyna, 2000) or individual ideologies (e.g., meritocracy, system justification; Major & Kaiser, 2017), as these provide an explanation or justification for why outgroups are not socially successful. For example, the stereotype "Indigenous Peoples are lazy" is not only a harmful description of Indigenous Peoples, but provides a biased explanation as to why Indigenous Peoples experience inequities compared to non-Indigenous peoples. This type of attribution in turn contributes to reduced perceptions of an outgroup's deservingness of public support (Reyna et al., 2006), whereas greater empathy is expressed when causal attributions reflect structural determinants (Herandez-Ramos et al., 2019). Motivational processes, particularly but not solely among advantaged group members, might trigger processes that enable them to define their higher status. For example, this could be manifested through system justification (the tendency to rationalize and defend existing systems (e.g., social, economic political; Jost, 2019), or by blaming outgroup members for their fate (Major & Kaiser, 2017). In Indigenous contexts within Canada, this is the justification of the sociopolitical and colonial systems (distal determinants) that historically have, and continue, to oppress Indigenous Peoples. In other words, society typically believes that others (or outgroups) get what

they deserve. As such, discussions about inequities may lead to defensive responses (Sullivan et al., 2012), and reduced support for addressing inequities (Hassler et al., 2019; Vezzali et al., 2017).

Attribution theory examines what people believe are the causes of group-based health behaviours and health outcomes (Heider, 1958; Weiner, 1985; 1995; 2006). Key components that determine a causal attribution are inferences of responsibility and controllability; in other words, attribution theory seeks to explain why people behave the way they do. When these dimensions of responsibility and controllability are used together, it can produce three inferences about the causes of group-based health behaviours and outcomes. Inferences of responsibility are categorized into three levels: individualistic (e.g., blame the individuals), structural (e.g., recognize external economic, political and social structures), and fatalistic (e.g., consider it fate or bad luck; Feagin, 1972). More recently, however, there has been an exploration of essentialist attributions (i.e., genetic or biological causes; Napier et al., 2018). Although essentialist attributions continue to place responsibility on individuals, they are viewed as uncontrollable. Thus, more recent frameworks regard the causal attributions as: (i) internal and controllable (i.e., individualistic); (ii) internal and uncontrollable (i.e., fatalistic and essentialist); and (iii) external and remediable (i.e., structural). Each of these causal beliefs has been linked with specific emotions and behavioural responses that affect the degree to which outgroup members are blamed for their outcomes (Corrigan et al., 2003; Reyna, 2000).

To connect the structural determinants of health framework and the attribution theoretical framework, an example is provided as follows: If non-Indigenous Canadians rely on the proximal structural determinants of health (e.g., individual health behaviours), they may develop victim blaming attitudes. For instance, the belief that Indigenous Peoples can eat healthier and exercise more to reduce higher rates of diabetes within Indigenous populations (i.e., an individualistic

causal attribution leading to blame) without recognizing the intermediate and distal structural determinants of health (e.g., limited access to affordable healthy food [intermediate] due to land appropriation, reserve systems, impoverishing economic systems, limitation of treaty rights [distal]) that influence higher rates of diabetes in Indigenous communities. If non-Indigenous peoples recognize the distal structural determinants of health (i.e., a structural causal attribution) they will be less likely to engage in victim-blaming attitudes and could be more supportive in addressing inequalities towards Indigenous Peoples. The behaviours or outcomes of outgroup members are often perceived to be directly caused by internal characteristics (e.g., the belief that people with diabetes make poor diet choices) and given that individuals are responsible for, and in control of, their health behaviours, they are often blamed for their health outcomes. This pattern of victim-blaming may reflect cognitive biases (in attributing causality), as well as motivational needs, enabling dominant group members to justify the neglect, powerlessness and social injustices that are the root causes of social outcomes (Braun et al., 2020; Jost, 2019). An explanation for this pattern of victim-blaming attitudes is systems-justifying ideologies (e.g., meritocracy, belief in a just world, social dominance orientation) in which people are motivated to justify and rationalize the way things are by viewing existing social, political and economic (e.g., distal structural determinants of health) systems are regarded as fair and legitimate (Jost, 2019).

Although the TRC specifically called for anti-racism and cultural competency as one pathway towards health equity for Indigenous Peoples (Calls to Action #23, #24, #27, #28, #57, #90, #92) the effectiveness of current educational efforts is unknown in relation to addressing common false beliefs about Indigenous Peoples. By developing an accurate understanding of causal beliefs of non-Indigenous people and the ways they attribute responsibility for ongoing inequities, we can begin to empirically explore the relationships between beliefs about causes of

health and social inequities (e.g., individual vs. social/structural determinants) and how these influence non-Indigenous peoples' perceived responsibility for addressing the health and social inequities of Indigenous Peoples'. For educators, this may help identify attitudinal and ideological focuses that are more amenable to change. Identifying causal beliefs and interventions to shift them demands methods of evaluating the effectiveness of educational programing for attenuating false beliefs and attributions.

This manuscript-based dissertation seeks to:

1. Evaluate the effect of Indigenous health curriculum on health professional learners' causal beliefs, their attitudes, and their perceived responsibility to address inequities in Canada and support for government assistance to reduce inequities (Manuscript 1); and,
2. Map and analyze the current research landscape of educational interventions on the historical and ongoing effects of colonization in Canada and in countries that share similar colonial histories (i.e., the United States, Australia and New Zealand). It also seeks to investigate the common evaluation methods used, as well as the short- and long-term outcomes of Indigenous health curricula on health professional learners' beliefs, attitudes and perceived responsibility to address inequities through scoping review methods (Manuscript 2).

1.4. Research Overview

This dissertation is comprised of two manuscripts that examine educational interventions to address colonialism, particularly in health professions education.

1.4.1. Manuscript 1

The first manuscript reports on three cohort-studies of health professional learners who have completed the *Introduction to Culturally-safe Care for Indigenous Peoples* at a large

university located in an urban centre. The course was designed based on the TRC's Calls to Action #22-24, which named education of healthcare professionals as critically important, calling for:

i. the healthcare system to recognize the value of Aboriginal healing practices (#22);
ii. cultural competency training for all healthcare professionals (#23); and
iii. medical and nursing schools in Canada "to require all students to take a course dealing with Aboriginal health issues" (#24).

The purpose of this course-based inquiry was to identify the effect of the course content on health professional learners' attitudes and causal beliefs (or attributional beliefs) about the inequities Indigenous Peoples experience in comparison to non-Indigenous Canadians to inform the development of future iterations. A manuscript was submitted to *BMC Medical Education* (October 2022).

1.4.2. Manuscript 2

A second manuscript was completed based on the findings of the course-based inquiry to better understand how educational interventions are designed and delivered, and the outcomes of Indigenous-specific educational interventions on learner's beliefs, attitudes and perceived responsibility. Manuscript 2 is a scoping review, a form of knowledge synthesis that attempts to identify key concepts, divergence, gaps, and areas for further research in a body of literature. A scoping review guided by Arksey and O'Malley's (2005) 5-stage scoping review methodology to review, summarize and synthesize the literature on this topic was completed to answer the following questions:

1) What theoretical frameworks have been used in educational interventions to teach about historical and ongoing colonialism as the root causes of the health inequities experienced by Indigenous Peoples?

2) To what extent do the reported educational interventions describe teaching about colonialism?
3) What approaches, methods, tools, and frameworks have been used in evaluating the effectiveness of such educational interventions in Canada, the United States, Australia, and New Zealand?
4) What post-intervention outcomes (e.g., knowledge, beliefs, attitudes, perceived behavioural changes) are commonly assessed?
5) What are the short- and long-term outcomes of these interventions?

A manuscript was submitted to *Advances in Health Science Education* journal (October 2022).

1.5. Dissertation Structure

Chapter 1 provides an overview on the structural determinants of health related to Indigenous health inequities. The framework is used to contextualize how the historical and ongoing forms of settler colonialism are associated with negative outcomes for the health of Indigenous Peoples. Attribution theory is applied within this chapter to begin to understand the underlying causes of non-Indigenous people's causal beliefs and how these beliefs can lead to fatal outcomes through victim-blaming attitudes and explanatory stereotyping.

Chapter 2 summarizes the literature on the beliefs and attitudes towards health and social inequities in Canada, and the harm of health providers' causal beliefs and attitudes towards group-based health outcomes. This chapter concludes by highlighting the need for educational interventions to accurately teach about historical and ongoing colonialism in Canada as a root cause of inequities of Indigenous Peoples, and identifies commonly-used approaches within the literature. This literature review helped to inform the development of the scoping review in Chapter 4, where the literature on educational interventions that taught Indigenous health was reviewed in-

depth. It also highlighted educational approaches, commonly-used methods, approaches and theories, and the associated outcomes of the educational interventions.

Chapter 3 provides an overview of the methods used in the two manuscript-based studies. This chapter begins with the following self-reflexive statement; "*Although not common in quantitative studies or scoping review methods as a critical researcher and non-Indigenous scholar working in the space of Indigenous health, it is important to my practice in order to ground my identity in my research and to understand my role in advancing reconciliation in Canada".*

Chapter 4 presents the manuscript-based study on the Indigenous health course evaluation highlighting the pre- and post-intervention survey results from three cohorts of health professional learners who completed the training in 2019, 2021, and 2022. The analysis explores the effects of training on learners' causal beliefs, victim-blaming attitudes, perceived responsibility, and support toward Government action and efforts to address inequities.

Chapter 5 details the manuscript-based scoping review study highlighting the interpretive analysis of publicly-available peer-reviewed literature on educational interventions that teach about historical and ongoing colonialism as the root cause of the health inequities experienced by Indigenous Peoples. The analysis explores the approaches, tools and frameworks used in the evaluation of the training, and assesses the training outcomes to identify the short- and long-term outcomes of these interventions.

Chapter 6 concludes by synthesizing the overall findings of both the health course evaluation and the scoping review. Recommendations are provided for educators and course developers looking to implement anti-racism and cultural competency educational interventions to address the TRC's Calls to Action in Canada based on the literature reviewed and course evaluations conducted.

Chapter 2: Literature Review

Indigenous Peoples in Canada and globally (e.g., Australia, New Zealand, the United States) embody resiliency and perseverance despite significant health and social inequities compared to non-Indigenous people (Allan & Smylie, 2015). These pervasive inequities are a result of settler colonialism perpetuated by the ongoing harms imposed by the colonial state of Canada through governance and assimilation policies (e.g., Indian Act, Indian Residential School system, Reservation system). Canada remains a colonial nation state (Godlewska et al., 2020) and the perpetuation of harms is evident by the continued overrepresentation of Indigenous children in the child welfare system (Blackstock & Bennett, 2009; de Leeuw & Greenwood, 2017), by the overrepresentation of incarcerated Indigenous youth and adults (Government of Canada, 2020), by the high numbers of murdered and missing Indigenous women and girls in Canada (National Inquiry into Missing and Murdered Indigenous Women and Girls, 2021), and by the continuous lack of government action (Chan, 2019).

The inequities experienced by Indigenous Peoples are shaped by the structures and attitudes established and sustained through post-contact colonial history. The Canadian education system's promotion of ignorance (Godlewska et al., 2020) of Indigenous Peoples' experiences with colonialism, and the elimination of the colonial history of Indigenous Peoples from educational curricula preserves non-Indigenous students' false beliefs about the causes of social and health disparities. Recognizing this, more accurately education on colonial history across ages, disciplines and sectors, would contribute to challenging Canadian non-Indigenous peoples' ignorance, and would educate them about the reasons why Indigenous Peoples experience health and social inequities. This requires teaching about the historical and contemporary effects of colonialism to challenge Canadian citizens' stereotypical explanations and ideologies, which

continue to justify these inequities as a lack of personal effort rather than recognizing the responsibility of the Canadian Government in causing such health and social inequities.

2.1. Beliefs and Attitudes towards Health and Social Inequities in Canada

Given the lack of education regarding colonization or the history, culture and worldviews of Indigenous Peoples, there has been a perpetuation of false beliefs and negative attitudes in relation to Indigenous Peoples, spanning multiple generations (Allan & Smylie, 2015; Godlewska et al., 2020). The inequalities experienced by Indigenous Peoples are directly related to the benefits experienced by non-Indigenous settlers that are built on a combination of misinformation and motivated self-interest (Godlewska et al., 2020). For instance, a longstanding point of contention in Indigenous-Settler relations in Canada concerns treaty land and harvesting rights. Two contemporary examples are demonstrated by the Wet'suwet'en protests of the Trans Mountain pipeline expansion (Chan, 2019) and the Mi'kmaq lobster dispute (Decembrini, 2020). In both examples, Indigenous Peoples are standing up for their Treaty Rights. Yet, the actions and anti-Treaty rights sentiments of non-Indigenous peoples demonstrate the lack of awareness and knowledge of Indigenous Peoples' inherent rights as signatories of treaties with the Government of Canada. The Wet'suwet'en protests of the Trans Mountain pipeline expansion explore the tensions of Indigenous Peoples and settler Canadians on important questions of Aboriginal title and land ownerships. The Mi'kmaq lobster dispute illustrates the lack of information and misinformation on Indigenous Peoples' treaty harvesting rights and their right to a moderate livelihood, which non-Indigenous fishermen have publicly refuted. In both instances, this demonstrates views among non-Indigenous peoples that Indigenous Peoples who evoke their Treaty Right are irresponsibly demanding unearned privileges. In both instances, Treaty Rights threaten colonial benefits experienced by non-Indigenous settler communities.

The lack of information, or false information, is exacerbated by the lack of personal contact that most non-Indigenous people have with Indigenous Peoples (Denis, 2015). For instance, Godlewska and colleagues (2020) found that nearly one-fifth of undergraduate students surveyed at a Canadian university (N=844) were apparently unaware that the nation state of Canada is on Indigenous territory, and that students believed that reserves, as well as differences in taxation laws, were "gifts from the federal Government" (p.153). The authors commented that "a small but vocal minority insisted that settlers today have no responsibilities" (p.153). Student responses reflected their beliefs that Indigenous Peoples' inherent rights and the dynamics of settler colonialism in Canada were matters of the distant past and had no bearing on contemporary inequalities. The tendency to frame settler colonialism as benevolent completely denies both historical and ongoing treaty agreements (or lack thereof), and contemporary inequalities experienced by Indigenous Peoples. Another study conducted by Yeung and colleagues (2018) found that medical students' positive sociopolitical attitudes and knowledge about Indigenous Peoples were the strongest predictor of perceptions that it was important for them to learn about Indigenous health; it was also indicative of an interest in working in Indigenous communities. Clearly, many current undergraduate students, including those enrolled in health disciplines, lack knowledge of the various aspects of colonization and its historical and ongoing effects on the health and social outcomes of Indigenous Peoples.

Indeed, settlers within Canada often deny or downplay the harms of the Indian Residential School system and selectively focus on the 'positive' benefits. For example, Lynn Beyak, a Canadian Senator delivered a controversial speech in the Canadian Senate defending the Indian Residential School system as being 'well-intentioned' (Senate of Canada, 2017), and demonstrated an unwillingness to learn the true history as she stated in an interview "I don't need any more

education" (Tasker, 2017). Such views create indifference towards the inflicted harm, continuing to justify colonization and protect the power, privilege and profit afforded to Canadian settlers who believe systems are egalitarian. Such beliefs thereby prevent efforts towards achieving reconciliation in Canada. Similarly, Doiron and colleagues (2021) reported that non-Indigenous Canadians who held stronger racist attitudes were more likely to believe that Indigenous Peoples should have derived psychological benefits from the Indian Residential School system (e.g., learned to appreciate life more), and were less likely to perceive that Indigenous Peoples continue to experience discrimination. In both instances, ignorance, anti-Indigenous racism and attributional errors work to create indifference towards, or to actively justify, the harms, violence and hostility of colonial societies.

These types of beliefs may reflect a lack of critical thinking skills more than a lack of knowledge. Non-Indigenous people's uncritical acknowledgment of the relationship between colonization and inequality serves to naturalize the subordination of Indigenous Peoples (Schaefli & Godlewska, 2014), as well as the over-privileged status of non-Indigenous people. A national public opinion survey (Confederation of Tomorrow 2019) of Canadian adults found that almost half (42%) of non-Indigenous respondents viewed Indigenous Peoples to be of similar status as other cultural or ethnic groups in Canada (Environics Institute, 2019), demonstrating the lack of historical education distinguishing the unique position and rights of Indigenous Peoples. Moreover, only 14% of non-Indigenous respondents blamed Canadian government policies for existing inequalities, while more than double (29%) blamed Indigenous People themselves. The attitudes that Canadians' hold towards Indigenous Peoples attributed to 8% of the survey responses. Although 82% of Indigenous Peoples who responded to the survey supported introducing mandatory curriculum about the history of Indian Residential Schools in all public

education, only 66% of non-Indigenous peoples supported such action. Two additional trends in the survey responses are worth noting. First, younger Canadians (age 18 to 29) were slightly more likely to support the introduction of mandatory curriculum in all schools. Secondly, Canadians who had more advanced education (i.e., college diploma or university degree) were more likely to strongly agree that all Canadians have a role in advancing reconciliation (Environics Institute, 2019). These are two important considerations to note as research supports these trends that younger generations (Adams-Price et al., 2004) and those with higher levels of education (Idisis et al., 2007) are less likely to hold victim-blaming attitudes. This would suggest that learners enrolled in Indigenous Peoples-specific education within their degree program may be less likely to maintain victim-blaming attitudes towards Indigenous Peoples given these trends in the general population.

Notably, there appears to be some momentum in the shifting of beliefs and attitudes when comparing results from the 2019 Environics survey to those collected 3 years prior (2016). Somewhat paradoxically, the proportion of non-Indigenous Canadians who recognized Indigenous Peoples' unique rights as the first inhabitants of the land has increased (52% in 2019 vs. 42% in 2016) although non-Indigenous Canadians' support for policies to address reconciliation in Canada decreased (64% in 2019 vs. 84% in 2016), despite the reports of the Truth and Reconciliation Commission of Canada in 2015 and the Missing and Murdered Indigenous Women and Girls Commission in 2021. The over-arching trend from these national surveys seems to be that non-Indigenous peoples appear to have an increased recognition of Indigenous rights, but that they are less supportive of developing policies to achieve equity. It is possible that the change over time reflects how 'moderate' expressions of discrimination can easily fall under the radar as long as they align with the status quo, which is fairly negative towards Indigenous Peoples in Canada.

Confirming what Indigenous Peoples have known for more than a century, the recent media coverage highlighting scientific evidence of unmarked graves at several Indian Residential Schools (Cooper, 2022), has created greater awareness in the Canadian social and political consciousness about the history of violence inflicted on Indigenous Peoples. In 2021, 28% of survey respondents reported being aware of the abuse and historical wrongdoings towards Indigenous Peoples compared to only 17% of respondents in 2016 (Environics Institute, 2021). Encouragingly, opinions appear to be positively shifting, with a higher proportion of non-Indigenous Canadians surveyed in 2021 believing that the main obstacle to achieving equity is Canadian Government policy, with fewer blaming Indigenous Peoples for the inequities they experience (Environics Institute, 2021). The increased awareness of the colonial trauma endured by Indigenous Peoples may be responsible for reducing victim-blaming attitudes, though there is considerable variation in opinions among population groups. Because education level was not measured in the 2021 survey, comparisons in this regard cannot be drawn; however, similar to previous findings, older Canadians (age 40 and older) were twice as likely to blame Indigenous Peoples for the inequities they experience. It was also found that Canadians living in the Prairies, and those who supported the Conservative political party, were more likely to blame Indigenous Peoples for inequities (Environics Institute, 2021). This finding is not surprising, since Canadian Prairie provinces have historically been more conservative in their political ideologies (Wishard, 2011), and conservative ideologies have generally been associated with more victim-blaming attitudes (Gomez & Wilson, 2006; Reyna et al., 2006; Zucker & Weiner, 1993).

Given that health professionals are members of society, they are not immune from experiencing similar false beliefs and exhibiting victim-blaming attitudes towards Indigenous Peoples within the general Canadian population. This is certainly evident by the experiences of

Brian Sinclair and Joyce Echaquan in accessing medical attention. This relationship between Indigenous Peoples and health professionals influences future healthcare experiences of Indigenous Peoples, and can be potentially corrected by educating health professional students on the root causes of inequities. To fully understand Indigenous Peoples' health and social outcomes, it is necessary to apply a theoretical framework of attribution to understand non-Indigenous peoples' causal beliefs. Understanding the underlying beliefs about the cause of inequities can help determine potential (and successful) solutions to addressing those inequities, particularly within healthcare but more specifically in health professional education.

2.2. Health Providers' Causal Beliefs of (Attributions for) Inequities

Past survey-based research demonstrates that healthcare providers tend to consider patient health behaviours (individual factors) as more important determinants of ethnoracial inequities rather than their own beliefs and attitudes as contributing to inequities (Gollust et al., 2018; Lurie et al., 2005; Sequist et al., 2008). Research has demonstrated that health professional practitioners and learners hold negative pre-conceived ideas about Indigenous Peoples (Chiodo et al., 2014; Ramjan et al., 2016; Wylie & McConkey, 2019) and that those perceived ideas are predictive of blaming attitudes towards Indigenous Peoples, which influence patient-healthcare provider relationships. Researchers have identified provider-level factors such as a lack of cultural competence and unconscious bias as key contributors to ethnoracial health inequities (Atkins et al., 2014) because providers may lack the critical thinking skills to connect health outcomes to the root causes of colonialism on Indigenous Peoples.

To date, little research has specifically explored the effect of health professional learners and practicing health professionals' beliefs, blaming attitudes, and perceived responsibility to addressing outgroup member health and social inequities on their clinical practice. Research

carried out among lay populations and policymakers indicates that recognition of social determinants of health for ethnoracial disparities is associated with a higher perceived responsibility to help address causes of racial disparities (Gollust & Cappella, 2014) compared to when respondents believed the sources of inequalities were individual factors (e.g., laziness, lack of motivation; Gollust & Lynch, 2011). Thus, it is necessary to explore the relationship between causal beliefs, blaming attitudes and perceived responsibility for reconciliation in a Canadian context to improve the health and social outcomes of Indigenous Peoples.

A qualitative study by Wylie & McConkey, 2019, which explored the attitudes and behaviours of Canadian health professionals towards Indigenous Peoples, found three main factors contributing to Indigenous Peoples' access to healthcare: (i) an unwelcoming environment; (ii) stereotyping and stigma; and (iii) practice informed by racism. Interestingly, respondents acknowledged their lack of understanding and knowledge of Indigenous Peoples' issues and culture, and that their beliefs were informed by stereotypes perpetuated in the media (Wylie & McConkey, 2019). These findings highlight that health professionals' care practices are influenced by their negative biases, and that negative stereotypes are a significant barrier to health outcomes (Allan & Smylie, 2015; Browne & Fiske, 2001). Therefore, discrimination within care practices needs to be addressed through a significant change in providers' attitudes, knowledge and skills in order to correct causal attribution beliefs and blaming attitudes (Wylie & McConkey, 2019), as these are influenced and passed on generationally through colonial racism towards Indigenous Peoples (Allan & Smylie, 2015). Colonial racism in Canada is multifaceted and complex – it has caused the health and social outcomes experienced by Indigenous Peoples through oppressive policies and lack of funding within Indigenous communities, as well as through the maintenance of harmful beliefs and attitudes towards Indigenous Peoples.

Given these entrenched beliefs and attitudes, it may be helpful to begin educational training related to Indigenous Peoples, racism and discrimination in undergraduate training to rectify any health professional learner's false beliefs and negative attitudes towards Indigenous Peoples before they become licensed professionals. A Canadian study found that although medical students recognize that stereotypes are related to processes of racism and discrimination, they generally believe that Indigenous stereotypes are based on factual information (Ly & Crowshoe, 2015). The results from these studies suggest that education that focuses on the effects of stereotyping on the healthcare experiences of Indigenous Peoples is a good starting point to address larger issues of racism, but will likely not be sufficient in changing deep-seated beliefs and social attitudes towards Indigenous Peoples. Given that health professional learners are still within the arena of education, they could be formally educated about the root causes of health inequities, which could alter or prevent victim-blaming attitudes. It is suspected that including the social and structural determinants of health within health professional education, and more specifically the unique historical and ongoing effects of colonialism in Canada, may be one mechanism to change ingrained causal beliefs and intergroup attitudes. Research is therefore required to explore the effect of learning about the root causes of inequities in altering false beliefs and intergroup attitudes.

Understanding providers' beliefs about health and social inequity, particularly their causal attributions for such inequities, is important because unless providers grasp the root causes of social and health inequities, their efforts towards change will likely be misguided at best and non-existent at worst. A qualitative study of the attitudes towards Indigenous Peoples expressed by Canadian healthcare providers in an Emergency Department found a high tendency to endorse egalitarian beliefs about the desirability of "treating everyone the same" (Tang & Browne, 2008).

Yet, there is evidence that Indigenous Peoples often experience 'second class treatment' in healthcare settings. This is exemplified by the medica coverage of the experiences of both Brian Sinclair and Joyce Echaquan – who were both subjected to discriminatory care, which is all too common in Canada. Browne and colleagues (2011) found that Indigenous Peoples accessing an inner-city emergency department anticipated poor quality of care, which is a known factor in delaying necessary help-seeking behaviours. These discriminatory experiences are not isolated to emergency rooms, they transfer to all aspects of accessing healthcare in Canada as an Indigenous person (Browne & Fiske, 2001; Nelson & Wilson, 2018).

A commonly-used strategy to address the attitudes of healthcare professional learners is to provide Indigenous-specific training. Yet, we know little about the effectiveness of changing beliefs, attitudes and perceived responsibility regarding health inequities. Two popular educational goals are cultural safety and cultural competency. Often evident within cultural competency training is the confusion between equity and equality (Blanchet Garneau et al., 2021). While egalitarian beliefs might appear desirable on the surface, they simultaneously assume resources; and since opportunities are already equal, they fail to acknowledge the historical and ongoing process of colonialism in Canada that creates inequities (Allan & Smylie, 2015). Cultural safety training is more apt to render power and equity central. Health equity framing potentially provides a useful analytical lens for examining systemic racism and addressing interpersonal and structural racism, as it aims to address the social and health outcomes of ill-served populations (e.g., Indigenous Peoples) by identifying root causes of such inequities. Health equity as an educational framework has the potential to alter false beliefs such as "Treat everyone equally", as expressed in Tang and Browne (2008), as healthcare systems in most Western countries are guided by the principle of equality (Blanchet Garneau et al., 2021).

In light of the dominant Euro-Western ideologies that underpin the Canadian healthcare system, healthcare professionals often prioritize the Western biomedical model, which tends to medicalize and attribute health and social outcomes to individual factors (e.g., genetics, behavior, culture, lifestyle) and disregards the sociopolitical/colonial factors of health outcomes. Given the complex relationships among history, social, economic, and political factors, these elements may constrain services, resources, opportunities, and even respect (Browne & Smye, 2002). For instance, the social determinants are often taught as a 'laundry list' of factors rather than as education that focuses on the complexity and interconnectedness of social identities (e.g., gender, ethnoracial status, social economic status) within the social determinants of health framework. Educators should advance from presenting a list of the social determinants of health within their classrooms to encouraging dialogue on how the social and structural determinants of health do not happen in isolation, but rather are connected by providing complex examples and case studies. For example, the historical contexts of colonialism are rarely taught within the social determinants of health frameworks. Yet, colonialism is the root cause of the inequities Indigenous Peoples experience in Canada because colonial policies and violence have resulted in poorer access to health services, water and food. This poor access has contributed to the health and social outcomes experienced by Indigenous Peoples. The ways in which healthcare providers conceptualize causes of ethnoracial discrepancies in health will either facilitate or hinder their ability to make a difference in improving Indigenous health outcomes (Nazione & Silk, 2013; Sequist et al., 2008). As such, efforts to raise awareness about the role of racism and colonialism as social determinants of health may improve awareness of structural forces influencing ethnoracial health inequities, as well as ethnoracial discrimination in healthcare.

2.3. Educational Interventions on Indigenous Peoples' History and Health

There is a substantial amount of international literature on the importance of cultural competency to improve healthcare systems and cultural safety, and to enhance health professional and patient relationships (Clifford et al., 2015; Jamieson et al., 2017; McCartan et al., 2020). Yet, despite the growing prominence of cultural competency and cultural safety in healthcare, policy and research, there is a lack of consensus as to the most effective ways to develop a culturally-safe and competent workforce. Within the education literature, there is a range of terms related to cultural competency and cultural safety without clear definitions. Alternately, they are used interchangeably despite differences in meaning. Terms such as "cultural awareness", "anti-Indigenous racism", "anti-prejudice", "cross-cultural", "trauma-informed", "ethnic disparities", and "racial disparities" are commonly cited. The lack of definitions or theoretical frameworks, coupled with the tendency to use indirect or vague , is problematic as it confounds the empirical literature on determining the success of educational interventions to address ethnoracial inequities, particularly for Indigenous Peoples.

There are limited tools to guide the development of content, learning approaches, and integration of interventions for addressing health and social equity in health professional education, with even less evidence about the effectiveness of these tools. The few authors who have provided documentation for developing and integrating content have emphasized the social and structural determinants of health (Jones et al., 2019; Sharma et al., 2018), dispelling false beliefs (Pedersen et al., 2008; Pedersen et al., 2011) and creating cultural awareness (Durey, 2010). It has been suggested that effective curricula must include opportunities for critical reflection (Allan & Smylie, 2015; Braun et al., 2020), a focus on Indigenous Peoples' voices (Mills et al., 2018), and interactive and experiential learning opportunities (Beavis et al., 2015). The literature

has highlighted the importance of incorporating these approaches and content in longitudinal, cross-sectoral and interdisciplinary studies (Beavis et al., 2015). Yet, Indigenous health training initiatives most often consist of a mandatory single course, a collaborative workshop, a cultural immersive experience, or course module that rarely goes beyond one session (Hunt et al., 2015; Ramjan et al., 2016). Not surprisingly, these training initiatives have demonstrated mixed results.

2.4. Educational Approaches

In education within health professions, the primary means to address health inequities is through framing them as stemming from cultural, ethnic or racial differences rather than from social or structural determinants of health framework. As such, education has often focused on creating cultural awareness of different health perspectives such as comparing and drawing differences between an Indigenous holistic wellness model and the Euro-Western biomedical model. While attention to Indigenous cultural knowledge and practices can be valuable to healing and health outcomes (Hadjipavlou et al., 2018; Varcoe et al., 2017), it risks perpetuating cultural or explanatory stereotypes as to why Indigenous Peoples experience inequities (Ly & Crowshoe, 2015), rather than focusing on how Euro-Western systems continue to oppress Indigenous Peoples. Research findings have shown that educational interventions that teach about the social and structural causes of inequalities can influence causal beliefs about the causes of disparities and reduce negative attitudes (Braun et al., 2020). Educational interventions that provide accurate information may be helpful in dispelling false beliefs and reducing prejudicial attitudes, at least in the short term (Pedersen et al., 2008; Pedersen et al., 2011). However, long-term evaluations are required to determine lasting outcomes, as it is possible for short-term changes to revert to original beliefs and attitudes over time due to constant exposure to negative messages among peers, family and media (Pedersen & Barlow, 2008).

It is important to assess targeted educational and social interventions, and to monitor potential unintended consequences to obtain a better understanding of what works in order to change deep-seated beliefs and attitudes. Few studies have explored the effect of providing attributional information (e.g., specific messaging or issue framing on the social factors causing health inequities) on causal beliefs and behaviours (Ramasubramanian, 2011). The inclusion of Indigenous Peoples' history and the effects of colonization in university curricula, particularly in health professional education, may be one way to address Indigenous Peoples' health and social inequities (Clifford et al., 2015). A critical understanding of the concept of colonization might rectify the negative attitudes towards Indigenous Peoples by increasing awareness of root causes of contemporary concerns (Hunt et al., 2015; Ramjan et al., 2016). However, there are limitations to the influence of knowledge alone on attitudinal and behavioural change. Beagan (2003) reported that Canadian medical students believe that learning about cultural and social issues was "all very nice to talk about in theory, but ultimately it makes no difference" (p.614) in clinical practice, when it is not upheld in everyday practice settings. Researchers and educators have called for professionals and learners to self-reflect, evaluate and increase their awareness about their beliefs, attitudes values, and worldviews, and to link this acquired knowledge to their clinical practice (Durey, 2010; Jamieson et al., 2017).

To promote health equity for Indigenous Peoples in Canada, the TRC called upon all schools and faculties of medicine and nursing to include Indigenous health issues in their curricula (TRC, 2015). Given the complexity of settler colonialism in Canada and the documented effect of systemic racism, this required complex and interconnected interventions to promote health and social equity for Indigenous Peoples. The research program outlined herein sought to map out the current literature to better understand the effects of educational interventions (e.g., anti-racism

education, cultural competency, cultural safety, cross-cultural training, Indigenous Social Determinants of health) regarding Indigenous Peoples, evaluating their effectiveness for challenging false beliefs, and their overall attitudes towards Indigenous Peoples. This required educators to evaluate short- and long-term change in learners' beliefs and attitudes to plan for and adjust the content accordingly so as to challenge ingrained false beliefs and attitudes. As stated by Denis (2020), "Unless education leads to a deeper shift in attitudes, behaviours and policies, it will not eliminate these structural inequities" (p.235). Therefore, it is important to measure educational and practice outcomes as a result of the anti-racism and cultural competency education strategies called for by the TRC and MMIWG reports. As such this research sought to explore the following objectives:

1) To evaluate the effect of Indigenous Peoples' health educational intervention on health professional learners' beliefs, attitudes and perceived responsibility, and to support government assistance to reduce inequities.
2) To map and analyze the current peer-reviewed literature to identify principles, approaches, methods, tools, frameworks, and outcomes (i.e., beliefs, attitudes and perceived responsibility) to designing specific educational interventions on Indigenous Peoples' experiences with historical and ongoing colonialism.

This chapter presented a broad overview of the historical and ongoing forms of colonialism in Canada, highlighting the influence it has on non-Indigenous Canadians' beliefs, victim-blaming attitudes, perceived responsibility, and support for social actions towards reconciliation. Although an extensive overview of settler colonialism in Canada is outside the scope of this dissertation, the overview provided the required information to begin to identify the root causes of Indigenous Peoples' inequities in Canada. The causal attribution literature was examined to understand and

identify the contribution of health providers and learners' beliefs and attitudes on the second-class treatment experienced by Indigenous Peoples. The chapter concluded by examining the educational interventions for addressing inequities faced by Indigenous Peoples and the educational approaches identified within the literature to examine what is already known about educational interventions. This has provided a contextualization of the present research within the broader attribution and educational intervention literature. This will help identify best practices in designing educational interventions to address the TRC's Calls to Action on anti-Indigenous racism and cultural competency, particularly Calls #22-24. The next chapter (Chapter 3) will provide a methodological overview of the dissertation, including a self-reflexive statement and a detailed description of the methods used in each manuscript within this dissertation.

Chapter 3: Methodology

This chapter is presented in three sections: a self-reflexive statement, theoretical framing of the dissertation, and the methods and limitations for each of the manuscripts included in this dissertation. The chapter begins with contextualizing the project through my perspective and commitment to addressing the inequities experienced by Indigenous Peoples in Canada as a non-Indigenous person. The research design is then broadly described in terms of the methods used within each manuscript-based study. This requires a description of the quantitative research design for evaluating the effectiveness of an Indigenous health educational intervention for health professional learners for Manuscript #1, and scoping review methods and processes for Manuscript #2. Given the focus of my dissertation on the decolonizing of beliefs, attitudes and behaviours, a critique of knowledge synthesis methods (within the limitations of Manuscript #2) is provided based on what counts and whose knowledge is valued in research given the dominant Western worldview in research.

3.1. Positionality and Social Location in the Research

In undertaking these studies, I am a non-Indigenous woman, first-generation-born Canadian to Portuguese immigrant parents. I was raised on the traditional land of the Anishinabek, in a city now known as Thunder Bay, Ontario. Thunder Bay is considered a racist hotspot in Canada for Indigenous Peoples living in the urban centre, but also for those who travel from more distant communities to access education, medical care and social services. In this regard, several inquests have been held in recent years, pertaining in particular to the relationship between the Thunder Bay police and Indigenous Peoples, triggered by the inquiry into the deaths of seven First Nations youth in the city; these cases had gone uninvestigated and were classified as accidental (Talaga, 2018). This context is not unique, as examples of racism towards Indigenous Peoples can

be found across Canada. However, it is in this context that I became committed to understanding the historical and ongoing colonialism in Canada, and the attitudes and beliefs of my non-Indigenous friends, family and neighbours. Immersing myself in this research as a non-Indigenous person has helped me to continuously recognize my own position in society, my experiences and biases, and the history of my communities and Canada as a whole in relation to the experiences of Indigenous Peoples.

Many of my early relationships with Indigenous Peoples started in childhood without even being aware because as a kid, I was colourblind to the world (as only white people can be) and I truthfully cared only about those with similar interests. Only now through my work with Indigenous communities and learning about the historical and ongoing violence towards Indigenous Peoples can I make sense of certain childhood experiences. Originally, I wrote about those childhood experiences, but then removed them as they were not my story to tell; I was simply an observer rather than an active participant in those experiences. My friend and I grew up with similar social capital with our dads working at the mine, our moms being stay-at-home moms for the most part, and attending the same Catholic school. We later attended the same university and pursued degrees in health disciplines. At times, I could have regarded my friend as an 'exception to the rule,' transcending the barriers faced by Indigenous people, but I was truthfully ignorant to my friend's First Nation identity until she won an Aboriginal Excellence Award at convocation. In that moment, I paused and reflected upon how, as a child, learning about their First Nation culture was simply taken for granted, and how I never paid attention to this in the past, while my knowledge about Indigenous Peoples, inequities and colonialism was developing. This is when I really began to critically think about why some Indigenous Peoples experience negative health and social outcomes compared to other Indigenous Peoples. What does 'resiliency' look like for

Indigenous Peoples? I was then able to make sense of these questions from this initial relationship, and even more so by working collaboratively with Indigenous Peoples and communities.

Another example was a class play in the sixth grade, where I played the role of the first woman of Turtle Island (I distinctly remember that I was cast for this role given my dark features; a moment I was quite proud of as I often did not look like my classmates, being Portuguese). My teacher did not explain (or I do not remember being told) that this was based on an Indigenous Creation Story of Turtle Island. Perhaps this could be classified as cultural appropriation, since our teacher did not assign credit to the story of whom we were learning and enacting (as predominately white kids). I highlight this example because it demonstrates that I was taught about Indigenous Peoples in elementary school from a strengths-based approach, illustrating different cultural views and ways of knowing (something I was familiar with, given my own Portuguese cultural views), but I was not taught accurate history of colonialism within our country. This accurate history is what is needed to understand the root causes of Indigenous Peoples' health and social inequities in Canada.

One final example – I always wanted to go to Africa since I was a child; my dad sponsored a child from World Vision before my brother and I were born, and I grew up seeing World Vision commercials where children were perceived as poor and needing support from white rich families in Canada (that was my perception as a child). When I was 19 years old, I travelled to South Africa and spent three weeks volunteering at an orphanage. I remember my mother (a trained Social Worker) telling me before I left that there were children in Canada who needed support, and that I should focus my efforts to advocate for equity with and for them in "my own backyard". But as a typical young adult, who did not want to listen or admit that Mom knows best, I shrugged it off and went on my way. Later in life, as I reflect upon the reasons why I decided to pursue this work

and how this research interest developed, I realize that it was based not only on my childhood experiences and on my mother's words. I perceive that my commitment to addressing inequities in Canada originated from my trip to South Africa. I kept a reflective journal during my stay in South Africa, which I revisited to gain better insight into how this formal educational journey and advocacy came to be. As I read through the entries in my journal, the following statement surprised me: "*There are children all over the world that need to be helped. I would really like to look into helping children with disabilities in third-world countries. I know Canada needs help too, but I feel that other children need it more in other countries*" (Gaspar, 2013).

There is a lot to unpack in that statement, but I want to focus on *I know Canada needs help too, but I feel that other children need it more in other countries*. At that time, I had just begun learning about Indigenous children and youth inequities in Canada and truly had no idea of the magnitude of inequities in Canada given settler colonialism. To be clear, white supremacy relies on white people remaining largely ignorant to the realities of colonial racism. My trip to Africa really exposed my assumptions and biases, and the work I needed to do within Canada. It was during this time that I became critically reflexive on Canada as a nation state in comparison to South Africa, particularly my belief that Canada was an equitable and egalitarian country for everyone; this challenged my understanding and awareness of Canada's relations with their Indigenous Peoples. During my time in South Africa, I learned about the apartheid and the inter-racial challenges, which made me take pause to reflect and draw parallels on the inter-racial relationships between Indigenous Peoples and non-Indigenous peoples in Canada. It was through my exposure to my beliefs and attitudes, and being critically reflexive to them, that I decided and committed to learning more about Indigenous Peoples inequities in my country. This trip also fueled my move to Saskatoon to complete my Masters of Health Science within an Indigenous

community. I became actively involved with their children, youth and young adult research portfolio, but more specifically my thesis examined and challenged understandings of empowerment from a Western perspective by exploring the cultural and linguistic understanding of *mamāhtāwicikew* (equivalent to empowerment in Plains Cree).

The knowledge I have gained from working with Indigenous communities, youth, Knowledge Keepers, and Elders shaped my research approach (see Gaspar & Ballantyne, 2020) whereby my work is enacted through practicing the "Four Rs" that Kirkness and Barnhardt (1991) described as respect, relevancy, reciprocity, and responsibility. Researchers' first commitment to working with Indigenous Peoples is to listen and deconstruct barriers caused by colonialism with the goal of eliminating the stereotypes that are a consequence of system-justifying ideologies (Brown & Strega, 2005; Denzin et al., 2008; Smith, 1999). Working with Indigenous Peoples requires that I practice humility, along with a willingness and readiness to learn and be corrected. Within my work, I focused on transformative action-oriented research which I defined as ensuring that research is participatory and reflective of the co-researcher's ability and readiness to inform action (Gaspar, 2018). An example includes the development of a Youth Community Garden based on First Nation Girls' experiences with hunger (Gaspar et al., 2019).

In this doctoral research, although I explore educational interventions for health professions learners, I am not a trained health professional or a health professional learner. Rather, I am trained in psychology and health services research. My research has largely been in collaboration with Indigenous youth to transform the youth mental health system to ensure they are able to access timely, culturally-relevant and safe services. This work recognizes that the beliefs, attitudes and behaviours of health professionals can influence Indigenous youth's willingness to seek help, and focuses on quality of care. As a non-Indigenous researcher, I have

been faced with criticism related to the fact that the entire youth mental health system (for non-Indigenous and Indigenous alike) needs a desperate transformation, "*So why do I focus on improving the experiences of only Indigenous youth?"* This is telling in that people, both practicing health professionals and the general population, are unaware of the unique structural determinants of health experienced by Indigenous youth in Canada, and how this relates to Indigenous Peoples' health and social outcomes.

To understand and become socialized within the field of health professions education, I collaborated with leading researchers to understand and explore the use of arts and humanities (Moniz et al., 2021 a, b, c) as it relates to Indigenous methodologies of storytelling and arts-based learning (Drawson et al., 2017; Hammond et al., 2018). Furthermore, I explored how and why reflective writing is used as a remediation tool for professional lapses with medical residents to begin conceptualizing how it can be used as an educational tool to develop insight in hopes to correct unprofessional behaviours (Moniz et al., 2022). I am not a formally-trained health professional educator, although I have been a teaching assistant for an undergraduate *Introduction to Aboriginal Health and Healing* course and have taught a new 8-class module on Indigenous Health Equity to Physiotherapy learners. When designing the Indigenous Health Equity modules, I follow a similar approach to my research by creating a transformative learning experience, and I always co-teach with an Indigenous scholar. A transformative learning experience is learning through praxis (Mezirow, 1997) in which learners engage in critical analysis and dialogue about social situations and issues in relation to one's values, worldviews and life experiences – in this instance, related to Indigenous Peoples.

There are advantages to being classified as an insider; Chavez (2008) stated that insiders can "understand the cognitive, emotional and/or psychological precepts of participants, and

possess a more profound knowledge of the historical and practical happenings of the field" (p.481). Merton (1972) suggested that "there is nothing fixed about the boundaries separating Insiders from Outsiders" (p.28). Within Indigenous health research, I am often an outsider, although my colleague Clifford would say that within his community, I would be considered an adopted insider researcher because I have spent time engaging with Elders and Knowledge Keepers to learn the history and to build trusting relationships within the community. There are also advantages to being a non-Indigenous person who engages in relationship-based research that is reflective of community priorities and benefits the communities through capacity-building; even with non-Indigenous allies, there is an overburden on Indigenous faculty members. Further recognizing that it is the responsibility of non-Indigenous settlers to educate other non-Indigenous settlers about Indigenous Peoples' experiences within Canada in order to advance reconciliation. This is particularly true for teaching about Indigenous health, as we know from research that there are limited numbers of Indigenous faculty who are stretched to the limit as sole instructors of Indigenous health curricula (Doria et al., 2021; Mohamed & Beagan, 2019).

I would engage in research regarding Indigenous health only with guidance and supervision from Indigenous scholars, including those on my supervisory committee. As such, the projects that follow in this dissertation are part of my commitment as a non-Indigenous scholar to educate and work to address the wrongdoings of historical and ongoing colonization to move towards reconciliation in Canada through multiple pathways within health services research: working in partnership with Indigenous youth and/or communities to set the research and policy agenda and through the education of health professional learners and practicing health professionals in future work. Justice Murray Sinclair said, "Education got us into this mess and education will get us out".

While I agree with these words, I am left with more questions than answers: What type of education will work? How will it be successful towards achieving reconciliation?

3.2. Theoretical Framework

The studies that make up this dissertation are informed by attribution theory, although there is no one unifying attributional theory that make up contemporary social psychology; rather , it is a collection of approaches that investigate perceived causality (Heider's 1958; Weiner, 1979; 1985;1995;2006). Within social psychology, an attribution is a judgement made by individuals about the cause of another's behaviour, which we rely on to understand why an outcome or behaviour has occurred. In real life, attribution is something we do, usually while being completely unaware of the underlying processes and biases that led to those causal inferences (Malle, 2011). These everyday attributions have an important influence on our beliefs, attitudes and behaviours, as well as the way we think about and relate to other people (Brandt & Reyna, 2011; Malle, 2011; Major & Kaiser, 2017). Causal attributions help people understand their social environments. However, oversimplifying information can result in, or reflect on, cognitive biases (Brandt & Reyna, 2011). This is the reason that, in the context of this dissertation, attribution theory was chosen as the guiding framework. I was interested in understanding the antecedents (individuals' explanation for Indigenous Peoples' inequities) and how this may inform their support for government social action and policies, and their perceived responsibility for addressing Indigenous Peoples' inequities.

Attribution-based theories originated from Heider's (1958) seminal work, systematically examining the concept of responsibility in relation to attributions of causality. His work distinguished between two sets of conditions: individual and situational disposition (i.e., within the individual's environment). Weiner (1979; 1985) extended Heider's work to include a

controllability condition, namely, whether the behaviour or outcome was perceived to be under *the control* of the individual. This cognitive process affects the degree to which outgroups are assigned responsibility for their inequities, and to what degree a government should play a role to support addressing inequities (Gollust & Lynch; 2011). For instance, attributions made for the behaviour or outcome of ingroup and outgroup members are often ethnocentric in the sense that members of a particular group favour members of their own group rather than members of outgroups (Dovidio et al., 2010). This is known as an attribution error, or 'bias', reflecting a tendency to underestimate situational factors and overestimate individual factors as causes of outgroup outcomes (Pettigrew, 1979). This cognitive attribution bias negatively affects causal beliefs of outgroup behaviours and serves to defend negative stereotyping of outgroup members (Brandt & Reyna, 2011; Reyna et al., 2006). As such, it is important to explore this in the context of Indigenous Peoples' experiences with colonialism in Canada to understand what and when sociopolitical factors might systematically influence causal attributions about inequities between Indigenous and non-Indigenous peoples, and the downstream effects on service delivery, policy and program support.

In the context of this dissertation, causal attribution is the overreliance of perceiving Indigenous Peoples as in control and responsible for causing their inequities (i.e., blaming Indigenous Peoples) rather than recognizing historical and ongoing colonialism as the causes of Indigenous Peoples' inequities. McCoy & Major (2007) highlighted that the cognitive attribution bias is more likely to be prominent when individuals hold prejudicial beliefs and when their own social group membership is salient. In addition, the intensity of the cognitive attribution bias will be greatest when the intergroups have a history of intense conflicts (e.g., colonialism), when they possess negative stereotypes, and when racial and cultural differences co-vary within national and socioeconomic differences (Doosje & Branscombe, 2003). An attributional framework was

applied twofold: to determine which outcome variables to explore in this dissertation, and the effect of historical and ongoing colonialism content on changing false causal beliefs and negative social attitudes, as most educational interventions are used to train non-Indigenous peoples on the causes of Indigenous Peoples' inequities in order to reconcile relations between Indigenous and non-Indigenous peoples in Canada.

3.3. Methods

This manuscript-based dissertation employs multiple methods to map and explore educational interventions intended to address the historical and ongoing effects of colonialism on the attitudes and causal beliefs of learners in the health and social care professions. The studies within this dissertation informed each other – the findings from the course evaluation studies demonstrated the need for further investigation into the design, delivery and outcomes of Indigenous-specific educational interventions to better understand what works to change deep-seated beliefs and attitudes. The methods for each of the manuscripts are described below.

3.4. Manuscript 1

The first manuscript describes the evaluation of a mandatory training module delivered to health professional learners (i.e., dentistry, medicine, nursing and pharmacy) at a university located within an urban centre in the first three course offerings in 2019, 2020, 2022. A 2021 cohort was also exposed to the course material but was not included in the analyses given demand characteristics created by course administrators providing information to learners prior to the start of the module-based course. The evaluation explored changes on learners' causal beliefs, victim-blaming attitudes, perceived responsibility, and social support. The study explored the effects of a mandatory course that included content about colonialism. The analyses assessed changes in beliefs about the causes of health and social inequities (i.e., causal attributions) between non-

Indigenous and Indigenous Peoples in Canada before and after learners completed the course. Of interest, was assessing changes in blame towards Indigenous Peoples for the inequities, and learners' professional responsibility and support for actions to address inequities. A publication was submitted to *BMC Medical Education* on October 26, 2022 (see Chapter 4). My role as a researcher was to evaluate the outcomes of the course; I did not participate in the course design or delivery. As such, I was responsible for identifying the theoretical orientation of this dissertation, for assessing existing survey tools to assess outcomes, and for developing survey topics to measure causal beliefs, victim-blaming attitudes, and support for government social action and policies. I was also responsible for data collection and analysis.

3.4.1. Participants

A total of 1208 health professional learners enrolled in three course offerings (2019, 2020, and 2022) of a mandatory course entitled, *Introduction to Culturally-safe Healthcare for Indigenous Peoples*. Students were invited to participate in a voluntary online survey to assess their causal beliefs, victim-blaming attitudes, perceived responsibility, and social support to address inequities. Of those enrolled in the courses, 335 learners completed the survey (27%) across the three offerings (n=76 in 2019; n=154 in 2020; n=105 in 2022). This evaluation study was exempt from research ethics review, as it was considered program evaluation (Dalhousie University, 2013; Tri-Council Policy Statement, 2018).

3.4.2. Education Intervention

The *Introduction to Culturally-safe Healthcare for Indigenous Peoples* course was delivered in a blended format with both in-person and online delivery. The course introduced health professional learners to perspectives on Indigenous Peoples' health through readings, group work, and interactive lectures with faculty, Elders, facilitators, and case scenarios. The course was

intended to provide students with a holistic understanding of Indigenous Peoples' health, including historical context, unique contemporary determinants of Indigenous well-being, and practices to consider for therapeutic healthcare encounters integrated with domains from the Canadian Inter-Professional Health Collaborative framework (CIHC). The course began as in-person-only training for a 4-week period with an "Orientation Module" and four learning modules (1.5 hours each). It then evolved into a hybrid delivery over a 6-week period with an additional learning module added in the 2022 cohort. The module titles are as follows: (i) Orientation; (ii) Indigenous Peoples, History & Health; (iii) Indigenous Peoples' Perspectives on Health Issues; (iv) Clinical Strategies for Indigenous Health; (v) Learning How to Integrate New Knowledge into Practice; and (vi), the most recent module, Building on Strengths of Indigenous Knowledge to Create Better Healthcare and Outcomes.

3.4.3. Measures

A brief demographic survey asked students to indicate their political ideology, gender expression, age, cultural identity, and health professional program. A measurement instrument developed specifically for this research by Melro and Bombay (2021) was administered before the course began, and again 3 months post-course completion, to measure: (i) causal attribution beliefs; (ii) perceived responsibility to address Indigenous Peoples' inequities; and (iii) views on Indigenous Peoples' deservingness of government support and action. A victim-blaming attitudes measure was also added and modified for the Canadian context to measure the attributions of responsibility for the health and social inequities facing Indigenous Peoples. All measures used seven-point Likert-type scales with the following anchors: 1 (Strongly disagree); 4 (Neutral); and 7 (Strongly agree), unless otherwise stated. Learners had the option to select 'do not know' on any of the four survey measures. Each measure is described within Manuscript 1 (Chapter 4) and

appended to this dissertation. The development process of the three measurement instruments (i.e., causal beliefs about Indigenous Peoples' inequities, perceived responsibility for addressing inequities, and support for government social action or policies) developed for this research are described below.

3.4.4. Development of the Survey Measures

The development of the survey measures followed the three stages outlined by Boateng and colleagues (2018) including item development, scale development, and scale evaluation. Items were generated by me in consultation with an Indigenous Advisory Committee comprised of Indigenous individuals with expertise in Indigenous health. Items for the causal beliefs about Indigenous Peoples' inequities were developed based on the theoretical framework of attribution and the structural determinants of health as it relates to the course material covering the root causes of Indigenous Peoples' inequities, namely historical and ongoing colonialism. Using a deductive approach, current research regarding causal attributions associated with outgroup outcomes, and the documented historical and ongoing effects of colonialism on Indigenous Peoples' health and social inequities were reviewed. The items included on the measures were pre-tested with three cohorts of learners with each iteration refining item selection through empirical evaluation (Streiner et al., 2015). Items that were retained were determined based on their descriptive properties (e.g., variance, mean), their relationship to the overall scale score, and their loadings on sub-components of the scale.

For two out of the three measures (i.e., perceived responsibility to address inequities, support for government responsibility and policies, and social actions to reduce inequities), items loaded onto one component when subjected to principal component analysis with varimax rotation. In particular, for the perceived responsibility to addressing inequities measure, only one

component was extracted with an eigenvalue of 2.43, accounting for 60.84% of the variance. For the Support for Government Responsibility and Policies and Actions to Reduce Inequities section, two components had eigenvalues greater than 1 (5.53 and 1.07, respectively). However, all items had loadings greater than .45 on the first component. Therefore, average scores were based on consideration of only one component. The results for causal beliefs about Indigenous Peoples' inequities are described below.

3.4.4.1. Causal Beliefs about Indigenous Peoples' Inequities

Given the unique context of colonialism in Canada, as well as the limited research on non-Indigenous people's causal beliefs or recognition of how historical and ongoing colonialism contributes to inequities, a measurement tool was developed for the purpose of this dissertation. Due to the novelty of such measure, the 12 items were subjected to a principal component analysis with a varimax rotation. Two components had eigenvalues greater than 1 (6.64 and 1.28, respectively) accounting for 66.04% of the variance. Subscale scores were created by averaging unit-weighted responses to items with loadings greater than .45; if an item met this criterion on both components, it was included in the subscale with the highest loading (See Table 1). Based on the items that loaded highly onto each of the components, the first component was labeled *historical aspects of colonization as a cause of health/social gaps* (6 items), whereas the second component appeared to reflect *ongoing effects of colonialism* (6 items).

Table 1

Rotated Component Loadings of Individual Difference Scale Scores

Item	*Component 1*	*Component 2*
The negative effects of the Residential School system are a significant contributor to the health and social	**.780**	

Item	*Component 1*	*Component 2*
gaps that exist between Indigenous and non-Indigenous peoples today.		
Because Indian Residential Schools were in the distant past, they probably don't play a huge role in the health/social gaps that exist today between Indigenous and non-Indigenous Canadians. (R)	**.823**	
The negative effects of the Residential School system have been transferred from one generation to the next, and contribute to ongoing gaps in health/social outcomes between Indigenous and non-Indigenous peoples.	**.828**	
Numerous policies put into place through the Indian Act over many generations have contributed to the present-day health disparities affecting Indigenous Peoples.	**.836**	
It is unlikely that the Residential School system has negatively affected the well-being of the children and grandchildren of those who attended these schools. (R)	**.882**	
There is no relationship between the social determinants of health (e.g., housing, income education) and the historical and ongoing health and	**.619**	.456

Item	*Component 1*	*Component 2*
social gaps between Indigenous and non-Indigenous peoples. (R)		
Indigenous Peoples in some contexts do not receive equitable health services, which contributes to ongoing health disparities.		**.517**
Indigenous Peoples in Canada receive the same amount or more funding for social and health services relative to non-Indigenous Canadians. (R)		**.848**
Indigenous People in Canada have equal or more access to government-provided healthcare. (R)		**.800**
Differences between Indigenous and non-Indigenous peoples in key social determinants of health such as income and education play a significant role in contributing to health and social inequities between these groups.	.482	**.574**
Certain ongoing government policies related to the provision of social services contribute to the ongoing health inequities facing Indigenous Peoples in Canada.	.490	**.609**
The long-term effects of the Residential School system have been over-exaggerated in the media and/or society in general. (R)	.552	**.611**

3.4.5. Procedure

Data was collected for three years in the *Introduction to Culturally-safe Care for Indigenous Peoples* course at baseline, before or on the first day of class, and were emailed an invitation to participate 3 months after completion of the course. A follow-up period of 3 months was chosen given the mixed findings of pre- and post-course evaluations immediately after the educational intervention. As such, the 3 months timeline was chosen because it aligns with the end of the academic term. The online survey was administered via Opinio software. Only learners who participated in the baseline survey were invited to participate in the post-course survey. The survey took approximately 20 to 30 minutes to complete. Given the sensitive topic, if students self-identified as Indigenous, a warning was provided on the nature of the questions, and they were asked if they wish to proceed in the study. Learners were provided with the contact information for the student wellness centre and crisis response if they experienced any distress in participating in the study. Participants also received the lead researcher's email address in case they had any questions about the study. Participants from the 2020 and 2022 cohorts received a modest honorarium, as the research team was able to secure a research grant.

3.4.6. Data Analysis

Statistical analyses were completed using the Statistical Package for the Social Science (SPSS) version 27.0 (IBM Corp, 2019). Data was cleaned and any data that could not be linked by student's unique user identification was excluded from data analysis. All data was analyzed descriptively (e.g., frequency, mean). Second, pre-post changes in beliefs about (i) colonization as a root cause of inequalities between Indigenous and non-Indigenous peoples; (ii) attributions of Indigenous people's responsibility for the inequities and acknowledgement or denial of colonization; (iii) perceived responsibility as a future healthcare provider; and (iv) support for

government policies and actions to reduce inequities were assessed using within-group multivariate analysis of variance (MANOVA). Potential interactions with students' demographic characteristics (e.g., gender, profession) were examined by including them as between-group variables in the MANOVAs or through mixed-measures hierarchical regressions when the moderator is a continuous variable. A between-group analysis was conducted of the various time periods to determine if additional time and modules influenced the desired outcomes.

3.4.7. Limitations

3.4.7.1. Study Design

This study employed a pre-post design involving a convenience sample of three cohorts of learners enrolled in the 2019, 2020, and 2022 course offerings of *Introduction to Culturally-safe Care for Indigenous Peoples* to determine the effect of the educational intervention on learner's beliefs, attitudes and perceived responsibility. In addition to the strengths of this study, there were limitations that warrant discussion presented by the design and methods. The first was the low response rate, as only 335 learners (or 27% of the 1208 learners enrolled in the mandatory course) participated in the voluntary course evaluation. This created several difficulties. It resulted in a small sample size, which made it difficult to determine a true significant change by the sheer lack of numbers needed for a more powerful statistical analysis. In general, women than men were more likely to complete surveys. The smaller sample size limited additional analysis by socio-demographic variables (e.g., age, cultural identity health professional program). Secondly, it is possible that with a low response rate that there was a lack of a random sample and those who self-selected to participate may have been more likely to prioritize and value issues related to Indigenous health. Thirdly, although we employed confidentiality measures to protect participants'

identity, a social desirability bias to responding to questions in a favorable manner may have occurred.

There are a few ways to increase learner involvement in future studies. The first is to have institutional buy-in to support the mandatory evaluation of such courses given the limited knowledge on how to best implement the TRC's Calls to Action on implementing anti-racism and culturally-competent educational interventions. A way of achieving this is by having learners complete the questionnaire during in-class time to garner a higher response rate; this was not permitted as the course evaluation was voluntary for learners. Enforcing compulsory participation in the evaluation may not increase reliability of the findings and can raise concerns over the meaningfulness of the evaluation, since learners might respond randomly without attention to content.

Another limitation was that the research design did not provide a control or comparison group to determine the effect of the intervention on learners' (i) causal attribution beliefs; (ii) blaming attitudes; (iii) views on Indigenous Peoples' deservingness of government support and action; and (iv) perceived responsibility to address Indigenous Peoples' inequities. It is possible that the organizational and institutional contexts and cultural subtests shape how and what students learn outside the formal and intended curriculum, including courses implemented to address the TRC's Calls to Action. Thus, it is important for future evaluation studies to employ an experimental-type design to test causal hypotheses of how well the educational intervention under investigation achieves its objectives. In the present research, it was expected that the following would be found: an increase in the endorsement of causal beliefs of historical and ongoing aspects of colonialism as a cause of health inequities, along with a reduction in blaming attitudes, and an

increase in social support and perceived responsibility to address Indigenous Peoples' inequities. To assess these hypotheses, we employed a quasi-experimental research design.

Based on the research design, there is no way to determine what the beliefs and attitudes of these learners would have been if they did not complete the mandatory course. We could have employed a comparison group comprised of another health professional program at the same urban university that did not participate in the mandatory *Introduction to Culturally-safe Care for Indigenous Peoples* course. This would have allowed us to compare changes over time to determine whether the educational intervention was associated with differences in health professional learners' causal beliefs, blaming attitudes, social support, and perceived responsibility. Due to the difficulty of employing a comparison group (due to institutional factors, time and feasibility), we conducted a longitudinal analysis to explore changes in learners' causal beliefs and social attitudes, and identified demographic variables that may be predictive of such changes. Although it cannot be concluded on the basis of the study's findings that the educational intervention caused the outcomes, it provides insight into the potential effects of such courses and identifies further areas to explore. As such, we discuss the need for complex and emergent evaluations of educational interventions in Chapter 6.

3.5. Manuscript 2

A scoping review is a form of knowledge synthesis that identifies key concepts, divergence, gaps, and areas of further research needs in a body of literature. Unlike other knowledge synthesis methods that seek to answer specific questions, scoping reviews are broad and do not critically appraise the methods of the studies selected for inclusion in the review (Arksey & O'Malley, 2005). They are, however, helpful for determining the breadth and nature of heterogenous literatures and/or areas of research that are emerging rapidly. This scoping review explored the

varying educational approaches used to teach about the historical and ongoing effects of colonization on Indigenous Peoples' wellness, the effects of the educational intervention on learners' attitudes, knowledge and beliefs, and how these variables are commonly measured across studies. Our study approach is guided by Arksey and O'Malley's (2005) 5-stage scoping review methodology to review, summarize and synthesize the literature in this area. The stages include identifying the research question, identifying the relevant studies, studying selection, charting the data, and collating, summarizing and reporting the results.

3.5.1. Scoping Review Protocol

The scoping review protocol is guided by the Preferred Reporting Items for Systematic Reviews and Meta-analysis extension for Scoping Reviews (PRISMA-ScR; Tricco et al., 2018) and the Joanna Briggs Institute's (JBI) prescribed methodology for reporting scoping reviews (Peters et al., 2015). Official guidelines, such as those from PRISMA and JBI, improve rigor and transparency in conducting and reporting scoping reviews. Consistency in practice is enhanced by strict adherence to these recommendations pre-approved by such bodies as JBI. This review, however, was not registered as an official JBI scoping review due to limited availability of necessary JBI-specific workshops at this time. This review was conducted concurrently with the other studies in this dissertation that delivered and evaluated the effectiveness of educational interventions, to both inform those and be informed by those. It is my hope that the scoping review will also help to inform future iterations of the development of Indigenous health equity educational interventions. A detailed overview of the review process is described in Chapter 5; what follows is a brief overview of the process and positionality of the reviewers. The scoping review was submitted to *Advances in Health Science Education* journal on October 6, 2022.

This scoping review mapped the following research questions:

- To what extent do the reported educational interventions describe teaching about colonialism?
- What theoretical frameworks have been used in educational interventions to teach about historical and ongoing colonialism as the root causes of the health inequities experienced by Indigenous Peoples?
- What approaches, methods, tools, and frameworks have been used in evaluating the effectiveness of training/education regarding Indigenous Peoples in Canada, the United States, Australia, and New Zealand?
- What training/educational outcomes (e.g., knowledge, beliefs, attitudes, perceived behavioural changes) are commonly assessed?
- What are the short- and long-term outcomes of these interventions?

3.5.2. Search Strategy

A research synthesis specialist librarian (Robin Parker) at Dalhousie University was consulted in the development of a comprehensive search strategy. Given that this is a scoping review for my dissertation, I was responsible for developing the search strategy and for coordinating the search. Robin provided insight as needed.

3.5.3. Eligibility Criteria

To be included in the review, papers needed to have been published in or since 2000 within Canada, the United States, Australia, or New Zealand, and must have been available in English. A preliminary search was conducted in MEDLINE (accessed via OVID) with a start date limited to 2000. The search strategy yielded a totally of 2419 articles for screening. This preliminary search in one database was to inform the criteria for the year of inclusion and exclusion. The search was

later carried out in all databases with the inclusion of 2000 and later for articles to be included in the scoping review. The year 2000 was identified based on cultural competency gaining popularity in the early 2000s (Clifford et al., 2015). Articles had to include educational content on Indigenous Peoples, and/or theoretical framework, and/or measurement tools, and/or outcomes.

3.5.4. Positionality of Reviewers

The lead reviewer was CM, who was responsible for developing the review questions, identifying databases, writing various subject terms, and overseeing the screening and completion of the extraction process. The second reviewer (JL) was a White settler in Treaty 6 territory who has engaged in reflexive analysis of who they are in relation to Indigenous Peoples and communities, and their commitment to reconciliation. While they had First Nations friends growing up and received more education about colonialism in Canada than most of their friends, it was not until they enrolled in an Indigenous health and mental health class in their third year of their Bachelor of Science Degree when they had the opportunity to conduct community-based participatory research for their honors thesis with a group of Inuit youth that deeper interest in this topic was sparked. Engaging in a partnership research methodology enabled JL to realize the strengths of the community rather than the deficit-based lens we are often taught from. JL is hoping to use this approach to research and develop innovative approaches to community development that empower individual and community holistic wellness during the completion of her Ph.D. in clinical psychology and in her professional career. Although doctoral degrees are often independent degrees, engaging in this scoping review method with another fellow trainee who is interested in pursuing Indigenous health research aligns with Indigenous worldviews of giving back. As the lead researcher of this doctoral work, I am working to build capacity and mentor

younger researchers to help support and alleviate the burden placed on Indigenous faculty members.

3.5.5. Data Extraction / Dialogical Spaces

Two reviewers (CM & JL) extracted relevant information from eligible evidence sources and engaged in dialogical spaces (a series of meetings to engage in dialogical learning) throughout the extraction process. Although dialogical spaces are not a part of the objective procedure of scoping reviews (see below for a critique of knowledge synthesis methods with, for, and by Indigenous Peoples), the research team opted to include them to challenge our understanding of the literature and how we position ourselves within the knowledge synthesis process. A detailed description of how we engaged in reflexivity in the review process is described in Chapter 5.

3.5.6. Analysis

Ideally, a meta-analysis of study outcomes would have been conducted for this review. However, it was not possible given the heterogeneity of study designs, interventions, and outcomes measured among the number of included studies. Rather, narrative and thematic analyses were completed. Codes were generated to categorize the training description, evaluation methods and outcomes. Studies were grouped by type of evaluation methods, and educational content and reviewers looked for patterns associated with these variations and outcomes. Using a thematic approach, we identified patterns in the ways educational interventions may or may not affect causal beliefs and attributions among learners, including impact over time. We identified the theoretical groundings employed most productively in educational interventions. Further, we identified the measurement tools that may be of value in assessing the impact of educational interventions, and in identifying their common foundations or characteristics. Lastly, we critically interpreted the post-educational intervention outcomes of the included studies.

3.5.7. Limitations

3.5.7.1. Critiquing Knowledge Synthesis Methods

A critique of knowledge synthesis methodologies is offered, given that this dissertation is focused on decolonizing beliefs, attitudes, perceived responsibility, and support for social action towards addressing inequities. Thus, we need to critique the way evidence has been drawn upon and drawn together to inform Indigenous health curriculum development and evaluation.

Established knowledge synthesis methodologies (e.g., systematic review, scoping review, meta-analysis) have become the gold standard of evidence-based practice as they are assumed to be superior to other review methods (e.g., narrative reviews). They are viewed as more likely to have a focused research question, and as more methodologically-rigorous (Greenhalgh et al., 2018). This stance is reflected in the development of methodological handbooks (Higgins & Green, 2011; Higgins & Green, 2022), tools and checklists to assess bias (Shea et al., 2007; Whiting et al., 2016), and structured reporting criteria (Liberati et al., 2009). Although knowledge synthesis methodologies are popular, they have also received considerable critiques as they are positioned within research methods as an objective approach to summarizing research (Chambers et al., 2018; MacLure, 2007; Pope. 2003). MacLure (2007) argues that reviews, given their objectivity, tend to have limited capacity to inform policy and practice since the interpretive processes of research are discouraged through the strict adherence to guidelines and frameworks. This is particularly true when researchers rely on Euro-Western guidelines and frameworks to determine what constitutes scientific evidence, since Indigenous knowledge is often viewed as anecdotal evidence (Ellison, 2014); ‘grey literature’ at best.

The question of what counts in decision-making processes to inform evidence-based policy and practice remains a critical issue for Indigenous scholars since research with Indigenous

Peoples has been, and continues to be, studied through a Western colonial lens, overlooking both its Indigenous knowledge and its contributions to the research process (Absolon, 2011; Kovach, 2010). It is argued that when appropriately conducted, review articles "represent powerful information sources for practitioners looking for state-of-the-art evidence to guide their decision-making and work practices" (Paré & Kitsiou, 2017). Yet, there are limitations to the knowledge sources that make up peer-reviewed articles that are heavily relied on for systematic and scoping reviews. Western culture has frequently identified itself as the ethnocentric centre of legitimate knowledge; however, Māori scholar Smith (2021) critiques dominant Western discourses of knowledge and objectivity as being grounded in imperial and colonial discourses that influence the beliefs, attitudes and behaviours of the researcher or learner, and fail to acknowledge other ways of knowing and being. Consequently, decolonizing research and post-secondary education entails transforming imperialist and assimilative frameworks by acknowledging and integrating Indigenous knowledges and epistemologies within research and education (Battiste, 2013; Smith, 2021).

An article by Chambers et al. (2018) focuses on decolonizing scoping review methodologies for literature with, for, and by Indigenous Peoples, highlighting three tensions with the scoping review process: ontological/epistemological disjuncture, tensions with concepts and language, and relationships with the literature and beyond. Knowledge synthesis methods have come to be viewed as the 'gold standard' within health and social research given their procedural objectivity – where methodological rigor is obtained from following rigid guidelines to enhance replicability of study results. Yet, this is a limitation to knowledge synthesis on research with, for, by, or *about* Indigenous Peoples as it does not unpack the colonial and imperial tensions in which social and health concerns are read through dominant (i.e., Euro-Western) perspectives in ways

that may ignore cultural knowledge and practices that foster Indigenous knowledge or ways of knowing. Peer reviewed literature often upholds dominant ontological/epistemological, use of concepts and language, and the engagement of readers with the literature. Chambers et al. (2018) state "knowledge synthesis should become knowledge discovery – through interpretation and critical reflection – rather than through knowledge replicability" (p.178). Knowledge synthesis should follow a decolonizing approach similar to the emerging field of decolonizing research. As settler colonialism and the imposition of categorization has imposed Euro-Western terminology/worldview within the scoping review process and does not allow room or engagement with more holistic, integrated and critical approaches offered by other ways of knowing and doing (Chambers et al., 2018). This imposition of categories continues to uphold Euro-Western approaches and languages used to describe Indigenous Peoples and the programs and services developed to support them. As such, it is important to critically reflect on how Indigenous Peoples and Indigenous perspectives are written and referred to within our writing of the findings, as this influences the reader's relationship with the literature and beyond.

The arguments in Chambers et al. (2018) should be extended to decolonizing methodologies in reviewing literature about Indigenous Peoples. For instance, colonialism has contributed to the negative social constructs of Indigenous Peoples, their communities and the causes of Indigenous Peoples' inequities and how individuals explain the causes of those inequities. Thus, it is imperative that educational interventions and research consciously work on the framing or contextualization of inequities to prevent victim-blaming attitudes and to increase support for change. This requires a decolonizing of scholarship within education, research to interrogate colonialism as it is applied within academia, and finding ways to integrate Indigenous ways of knowing (Chambers et al., 2018).

To address the critiques identified by Chambers et al. (2018) and to extend these limitations to research about Indigenous Peoples, we applied an interpretation and critical reflection within the review process through dialogical spaces. We were interested in exploring the extent to which the reported educational interventions describe teaching about colonialism in order to better understand how researchers within the educational field view learning and challenge colonial ideologies as an important first step in changing false beliefs, attitudes and perceived behavioural changes. In addition, we extracted data regarding whether the authors of the included educational interventions positioned themselves within the educational intervention or research process, and if Indigenous Peoples or communities were included within the various or all stages of the educational interventions (e.g., design, delivery, evaluation). This interpretive and critical reflexivity is an important step in decolonizing knowledge synthesis methods as the research team's goal was to complete this research endeavor to inform future development of educational interventions to address the TRC's Calls to Action on anti-Indigenous racism and cultural competency, particularly Calls #23 and #24.

A scoping review was chosen over other forms of review methods (e.g., meta-analysis, systematic) as the research is designed to identify gaps within the current literature on the theoretical frameworks, approaches, methods, and tools used in evaluating the effectiveness of health professional training, and in identifying training outcomes of these Indigenous health interventions. It also determines whether the goal of this scoping review is to persuade decision-makers in policy and practice related to anti-Indigenous racism and cultural competency training as called for by the TRC, then we must use methods that help 'prove' or demonstrate the need for further research on implementing effective training. A scoping review method is considered ideal given that for this topic the evidence is emerging and complex (Arksey & O'Malley, 2005).

Knowledge synthesis, including scoping reviews, can be critical methodologies if they engage in the "unpacking of a problem that situates the work historically and methodologically" (Lather, 1999, p.3). This unpacking requires the reviewers to engage in reflexivity to acknowledge which knowledge is established and dominant within research (Pope, 2003). Throughout this dissertation, I engaged in positionality that highlights who I am in relation to Indigenous Peoples, how I have come to work in Indigenous health research, my approach to research with Indigenous Peoples, and my commitment to reconciliation.

3.5.8. Summary

This chapter began with a reflexivity exercise in positioning myself within the research as a non-Indigenous allied health researcher. This chapter then concluded with a broad overview of the multiple methods employed in this dissertation to map and explore the effects of educational interventions on changing learners' beliefs, attitudes and perceived behavioural changes. Together, these manuscripts will help us begin to understand and identify best practices in designing educational interventions to address the TRC's Calls to Action on anti-Indigenous racism and cultural competency, particularly Calls #22-24. A critique of knowledge synthesis methods was provided given the importance of challenging and changing established beliefs, attitudes, and behaviours within this dissertation. This also requires researchers to think of the research methods and tools used and the required system (e.g., ideologies, worldviews, academia), and the changes that are required to reconcile relationships between Indigenous and non-Indigenous peoples. The next two chapters will provide the two manuscripts submitted for partial fulfilment of the requirements for the degree of Doctor of Philosophy.

Chapter 4: Manuscript 1

This chapter presents the manuscript-based study submitted to *BMC Medical Education*; it reports on the course-based inquiry of an Introduction to Culturally-safe Care for Indigenous Peoples highlighting the pre- and post-survey results from three cohorts of health professional learners who completed the training in 2019, 2020, and 2022. The analysis explores the effects of training on learners' causal beliefs, victim-blaming attitudes, perceived responsibility, and support towards Government action to addressing inequities.

As the first author, I was responsible for the study design, analysis and development of the manuscript included below.

4.1. Abstract

Background: Addressing the Truth and Reconciliation Commission's Calls to Action, including anti-racism and cultural competency education, is acknowledged within many health professional programs. However, little is known about the effects of a course related to Indigenous Peoples and colonialism on learners' beliefs surrounding the causes of inequities and intergroup attitudes.

Methods: A total of 335 learners across three course cohorts (in 2019, 2020, 2022) of health professional programs (e.g., Dentistry/Dental Hygiene, Medicine, Nursing, Pharmacy) at a Canadian university completed a survey prior to, and again 3 months following an educational intervention. The survey assessed gender, age, cultural identity, political ideology, and health professional program, along with learners' causal beliefs, blaming attitudes, support for social action, and perceived professional responsibility to address inequities. Pre-post changes were assessed using mixed-measures (Cohort x Time of measurement) analyses of variance, and demographic predictors of change were determined using multiple regression analyses. Pearson correlations were conducted to assess the relationship between the main outcome variables.

Results: Only one cohort of learners reported change following the intervention, indicating greater awareness of the effects of historical aspects of colonialism on Indigenous Peoples' inequities. Unexpectedly, however, they expressed stronger blaming attitudes and less support for government social action and policy after completing the course. When controlling for demographic variables, the strongest predictors of blaming attitudes towards Indigenous Peoples and lower support for government action were among males and dentistry learners. There was a negative correlation between historical factors and blaming attitudes suggesting that learners who were less willing to recognize the role of historical factors on health inequities were more likely to express blaming attitudes. Further, stronger support for government action or policies to address such inequities was associated with greater recognition of the causal effects of historical factors, and learners were less likely to express blaming attitudes.

Conclusion: The findings with respect to blaming attitudes and lower support for government social action and policies suggest that educational interventions can have unexpected negative effects. As such, implementation of content to address the Truth and Reconciliation Commission's Calls to Action should be accompanied by rigorous research and evaluation that explore the way attitudes are transformed across the health professional education journey to monitor intended and unintended effects.

Keywords: Indigenous health, cultural safety, attitude change, racism, attribution bias

Beliefs around the causes of inequities and intergroup attitudes among health professional students before and after a course related to Indigenous Peoples and colonialism

4.2. Introduction

Globally, Indigenous Peoples experience health and social inequities compared to those who are non-Indigenous (Adelson, 2005; Uphoff & Pickett, 2018), a fact known to most people living in settler colonial countries such as Canada (Environics Institute, 2019). Despite widespread knowledge about the existence of such inequities, many Canadians do not have basic knowledge of their shared colonial history and thus, hold inaccurate beliefs about the causal factors contributing to Indigenous health and social issues (Allan & Smylie, 2015; Godlewksa et al., 2021). As described in the Truth and Reconciliation Commission (TRC) of Canada's final report, the education system "has failed to teach this history" (p.286), and non-Indigenous Canadians have "little understanding of how the federal government contributed to this reality…" (TRC, 2015, p.286). In line with Attribution Theory (Heider, 1958; Weiner, 1985; Weiner, 1995), without factual knowledge regarding the true root causes of inequities, non-Indigenous peoples may attribute the causes of group-based differences to intrinsic negative characteristics of Indigenous Peoples and underestimate the effects of external causes (Environics Institute, 2019). Such internal individual-level causal attributions for inequities held by advantaged group members who either do not know about, or do not recognize the importance of, structural determinants of well-being may lead health professionals to provide second-class healthcare to Indigenous Peoples (Allan & Smylie, 2015).

The good news is that educational interventions that teach about the social and structural determinants of group-based inequities in other contexts have been shown to increase external causal attributions (Braun et al., 2020) and reduce negative intergroup attitudes (Case, 2007). In

line with this research, the TRC of Canada issued a call in its 2015 final report for the implementation of antiracist educational interventions and cultural competency training for healthcare professionals. These recommendations build on those of the Royal Commission on Aboriginal Peoples (1996) and call for explicit acknowledgement of causal links by including content focused on understanding colonialism and its impacts on the health and social well-being of Indigenous Peoples. That said, positive outcomes of educational efforts that aimed to improve intergroup relations were not always evident (Van Assche et al., 2020), emphasizing the importance of evaluating such interventions to assess if they are having the intended effects (Pedersen et al., 2011). Despite the recent emergence of newly-developed content about colonialism and its legacy being delivered in educational contexts since 2015, there is a lack of empirical evaluations assessing how learning about the harmful effects of colonialism is related to causal attributions for inequities and intergroup attitudes (Melro et al., in prep). The current study explored the effect of a mandatory enrollment in a course that included content about colonialism among first year health professional students at an urban university. The analyses assessed changes in beliefs about the causes of health and social inequities (i.e., causal attributions) between non-Indigenous and Indigenous Peoples in Canada before and after learners completed the course. It was of interest to assess attitudinal changes in blame towards Indigenous Peoples for the inequities, learners' professional responsibility, and support for actions to address inequities. Research has demonstrated that negative social attitudes have been linked to reduced perceived responsibility for addressing inequities (Gollust et al., 2018; Ramjan et al.,2016; Weiner, 2006) and support for actions (Gollust et al., 2018;Toporek & Pope-Davis, 2005; Vanidestin & Aparicio, 2019) to address these inequities.

4.3. Educational Interventions related to Indigenous Peoples and Colonialism

Euro-Caucasian settlers within Canada may deny or downplay the harms of colonialism and selectively focus on the 'positive benefits' (Doiron et al., 2021), demonstrating an unwillingness to learn the true history of colonialism and its impacts on the health and social well-being of Indigenous Peoples. In this regard, the TRC's final report described how many non-Indigenous Canadians "hear about the problems faced by Indigenous communities, but have almost no idea how these problems developed" (p.286). In line with this view, a 2019 national public opinion survey of Canadian adults demonstrated that almost half (42%) of non-Indigenous respondents viewed Indigenous Peoples to be of similar status as other cultural groups in Canada with more than double (29%) blaming Indigenous Peoples themselves for existing inequities compared to the 14% who blamed Canadian government policies (Environics Institute, 2019). Such views create an indifference towards colonial harms done and a justification of colonization as settler Canadians are motivated to believe systems are egalitarian. These egalitarian views in the healthcare system have become recognized as contributing to Indigenous health inequities (Browne, Varcoe, & Ward, 2021; McCallum & Perry, 2018; Turpel-Lafond, 2020).

A recent national public opinion poll, as previously described, found that older Canadians (age 40 and older) are twice as likely to blame Indigenous Peoples for the inequities they experience (Environics Institute, 2019). A possible explanation for this might be a greater awareness among younger people of the colonial trauma as a result of the TRC's Calls to Action that highlight the historical and social trauma endured by Indigenous Peoples. Such awareness might, in turn, diminish victim-blaming attitudes, although there is considerable variation in such opinions among age groups. Poll results also revealed that Canadians living in the Prairies, and those who supported the Conservative political party were more likely to blame Indigenous

Peoples for inequities (Environics Institute, 2021). In this regard, conservative ideologies have been associated with more victim-blaming attitudes in general (Gomez & Wilson, 2006; Reyna et al., 2006; Zucker & Weiner, 1993).

Recognizing the pervasive continued racism and lack of knowledge regarding colonialism in Canada, the TRC's call for mandatory training for health professional learners led to the creation of curricular content related to colonialism as outlined by the Indigenous Physician's Association of Canada (2009) and Aboriginal Nursing Association of Canada (2009). Indeed, learning about the legacies of colonialism appears to be a common learning objective in courses about Indigenous Peoples in Canada and beyond (Melro et al., in prep; Pitama et al., 2018). Although some health professional programs had content related to Indigenous Peoples in place before the TRC's Calls to Action, there has been a rush for some health professional schools and professional licensing bodies in Canada to develop and deliver such content (Association of Faculties of Medicine of Canada, 2019; Canadian Association of Schools of Nursing, 2020). While willingness is a positive step, it has unearthed considerable ambiguity and complexity in the development and evaluation of these interventions. Part of this complexity arises from the heterogeneity of conceptional models guiding course development (e.g., cultural safety, transformative learning theory), the diversity of specific course content, objectives, and approaches to evaluation (Downing & Kowal, 2011; Melro et al., in prep). Despite differences across initiatives, a recent scoping review of 14 studies evaluating Indigenous health curriculum revealed that content was similar across interventions in Canada and other countries in their inclusion of learning objectives related to historical and political aspects of colonialism and social determinants of health, and most included related content, such as racism and privilege (Melro et al., in prep).

4.4. Outcomes of Educational Interventions about Indigenous Peoples and Colonialism: Beliefs about the Causes of Indigenous Inequities

Although research has documented increased knowledge as a result of educational interventions about Indigenous Peoples (Herzog et al., 2022; Hunt et al., 2015; Jamieson et al., 2017; Oosman et al., 2019; Shah & Reeves, 2015; Thackrah et al., 2015), few have assessed changes in beliefs about the causes of Indigenous inequities. In the only study of which we are aware, first year midwifery students in Australia were more likely to agree that "The state of Aboriginal health is mainly due to a lack of funding for health services" directly following a course, which the authors interpreted as reflecting "acknowledgement of structural factors at play in health status" (Thackrah et al., 2015, p.5). That said, when these post-course responses among first-year students were compared with those of second- and third-year cohorts who had taken the course a year or two earlier, the first-year students were more likely to agree with this statement. The authors interpreted this as reflecting a decline in structural attributions over time since taking the course, which was supported by the fact that the second- and third-year students were less likely than the first-year students to agree that "The information I learned in this unit has changed my views on Aboriginal issues" (Thackrah et al., 2015, p.6).

Although not specifically assessing causal attributions for inequities, beliefs related to understandings of colonialism and its effects on Indigenous Peoples have been assessed before and after educational interventions. For example, 98% of learners agreed or strongly agreed that the KAIROS Blanket Exercise "gave them a greater awareness of the impact colonization has had on Indigenous Peoples" (Herzog et al., 2021, p.1439). In Australia, qualitative data from nursing students who completed a course dedicated to Indigenous history, culture and health revealed that some learners reported "increased knowledge and understanding of Indigenous history and the

impact of past events and government policies on the health status of Indigenous Australians" (Hunt et al., 2015, p.464). Learners who participated in this study also described an enhanced awareness of the inherent challenges for Indigenous Australians related to the social determinants of health, and "developed their understanding of the effects of colonization upon the health status of Indigenous Peoples in the contemporary context." (Hunt et al., 2015, p.465).

4.5. Outcomes of Educational Interventions about Indigenous Peoples and Colonialism: Attitudes towards Indigenous Peoples and their Health Inequities

Causal attributions about group-based inequities have been linked to intergroup attitudes among members of various advantaged groups (Sahar, 2014). However, very few educational interventions regarding colonialism and Indigenous Peoples have assessed intergroup attitudes before and afterwards (Melro et al., in prep). In one such study, nursing students in Australia who completed a course about Indigenous Peoples and colonialism reported less negative intergroup attitudes (Hunt et al., 2015); they were less likely to agree with statements such as 'Land rights for Aborigines are just a way of them getting more than they deserve' or 'Aboriginal people get given more government money than they should'. Likewise, nursing students engaged in a cultural immersion service-learning experience in an isolated rural American Indian community reported more positive attitudes on items assessing blatant racist attitudes (e.g., I believe that Native Americans are inferior to Whites;), modern racist attitudes (e.g., I don't understand why Native American peoples blame all White people for their social misfortunes), and other related intergroup variables (e.g., I believe I know a lot about black [peoples' customs]; I am comfortable talking to Native Americans; Alexander-Ruff & Kinion, 2019).

Other potentially consequential attitudinal changes may be elicited by learning about colonialism and how it has contributed to health inequities. In this regard, an integrated Aboriginal

health curriculum that included content about colonialism and its links with Indigenous well-being was associated with increased agreement among learners that they "had a social responsibility to work for change in Aboriginal health" (Paul, Carr & Milroy, 2006). Likewise, research in Australia indicated increased "intentions to improve current health inequities" among medical educators after a course that taught colonialism (Durey et al., 2013). However, another study that asked learners about their future work commitment ("I have a social responsibility to work for changes in Aboriginal health") found no change after learning about colonialism, likely because the majority of students reported high perceived responsibility in the pre-course survey (Thackrah et al., 2015).

While conveying to learners accurate information about Indigenous Peoples may seem like a sensible and effective way of reducing false beliefs and negative attitudes (Allan & Smylie, 2015; Godlewska et al., 2020), there are various limitations to consider with this approach. Providing factual knowledge in a standalone short educational intervention – which is often how such information is delivered in health professional schools – may not always be successful in reducing negative intergroup attitudes when used in isolation (Pedersen, Walker, Paradies, & Gueurin, 2011): even when immediate post-course attitudinal changes occur, they may not be sustained over time (Thackrah & Thompson, 2013; 2018; Thackrah et al., 2015). Such one-time interventions risk 'essentializing' populations, with the unintended effect of strengthening rather than debunking common myths and confirming stereotypes (Pedersen & Barlow, 2008; Pedersen et al., 2011; Schwarz et al., 2007; Williamson & Harrison, 2010). An early study among medical students in Australia reported an increase in knowledge related to Indigenous Peoples after completing the course, but also an increased tendency to see all Aborigines as the same (Copeman, 1989). Discussions about group inequities have been shown to elicit defensive (Sullivan et al., 2012) or

resistant responses (Browne, Varcoe & Ward, 2021), and reduced attitudinal support for addressing inequities (Hassler et al., 2019; Vezzali et al., 2017). Such potentially diverging outcomes emphasize the importance of evaluating educational interventions that include content about the social determinants of health and group-based inequities to ensure that they are not having the unintended effects of making racist beliefs and attitudes worse.

4.6. Current Study

Given the urgency of addressing discriminatory healthcare beliefs and practices through health professional education that increases knowledge and positive intergroup attitudes, there is a need to assess both the intended and unintended consequences of training related to Indigenous Peoples and their well-being. To date, little research has explored the effects of educational interventions on health professional learners' causal beliefs about health and social inequities facing Indigenous Peoples, attitudes that blame Indigenous Peoples for such inequities, learners' sense of responsibility, and support for actions to address inequities. This evaluation assessed the changes of beliefs and attitudes following a course for first-year health professional students that taught colonialism and its legacy. It was anticipated that the intervention would lead to an increased endorsement of structural causal beliefs (i.e., recognition of historical and ongoing colonialism), lower victim-blaming attitudes, increase perceived responsibility, and support for action to address inequities among learners from a range of health professional programs. In addition, we examined the role of learner age and political views on influencing training outcomes.

4.7. Methods

This study utilized the opportunity afforded by the introduction of mandatory content for first-year health professional students at an urban university. A module-based course was introduced in 2019 with content presented both in-person and online including readings, group

work, case scenarios, and lectures with faculty, Elders, and facilitators over four weeks. In 2022, content building on Indigenous knowledge to create better healthcare and outcomes was added, and the course was subsequently extended to six weeks. The following content was consistent across three course offerings (2019, 2020, and 2022): Indigenous People, History & Health; Indigenous Peoples' Perspectives on Health Issues; Clinical Strategies for Indigenous Health; and, Learning How to Integrate New Knowledge into Practice. The course was informed by the concept of Cultural Safety and developed by Indigenous and non-Indigenous faculty members in partnership with Elders, Knowledge Keepers, and community members. In addition to content on culturally-safe healthcare, the course provided an overview of national and regional Indigenous health and social outcomes facing Indigenous Peoples, and addressed two learning objectives related to colonialism and its legacy:

1) "Acquire knowledge about the Indigenous Peoples who live in Canada, where they live, and important historical events that have affected their health and well-being; and,
2) Understand the current day impact of historical injustices, racism and how policy and landmark decisions (Indian Act, Indian Residential Schools, Sixties Scoop, the United Nations Declaration of the Rights of Indigenous Peoples, Indian Day Schools, etc.) can and have shaped healthcare systems".

4.7.1. Participants and Procedures

A self-report questionnaire was administered via email to a total of 1208 first-year health professional learners enrolled in the mandatory course, *Introduction to Culturally-safe Care for Indigenous Peoples* at baseline (before or at the start of course) over a three year period. The survey advertisement was posted on the course homepage. Although it would have been preferable for students to complete the questionnaire during in-class time to garner a higher response rate, this

was not permitted as the course evaluation was voluntary for learners. This evaluation study was exempt from research ethics review as it was considered program evaluation (Dalhousie University, 2013; Tri-Council Policy Statement, 2018). Informed consent was provided by all participants. The survey took approximately 20 to 30 minutes to complete. Only learners who participated in the baseline survey were invited to participate in the post-course survey. Those who agreed to be contacted were sent an email 3 months following the course completion, with reminder emails sent to encourage participation. If students self-identified as Indigenous, a warning was provided on the nature of the questions, and they were asked if they wished to proceed. A follow-up period of 3 months was chosen given the mixed findings of pre- and post-course evaluations immediately after the educational intervention. As such, a 3-month timeframe was chosen because it aligns with the end of the academic term. All learners were provided with the contact information for the student wellness centre and crisis response if they experienced any distress in participating in the study. Respondents in the 2020 and 2022 cohorts received a modest monetary incentive ($5) for completing the post-course survey.

4.7.2. Measures

Participants were asked to create a unique identifier when completing the baseline survey in order to link survey responses across the two measurement time points. The questionnaire included a total of 38 items across the following measures: socio-demographic, causal beliefs, victim-blaming attitudes, perceived professional responsibility, and support for actions to reduce inequities. Demographic variables, including health professional program, age, gender identity (woman and man), Indigenous identity (Indigenous and non-Indigenous), and political views were captured at baseline. Socio-demographic questions (measured using open-ended questions) for gender and Indigenous self-identification, with man and woman; and Indigenous and non-

Indigenous, respectively. Political views were elicited with the following question: *What political group do you support?* Response options included: New Democratic Party, Green Party, Conservative, Liberal, None and Other. From least to most socially conservative, political parties in Canada would be arranged Green, NDP, Liberal, Conservative. For all remaining items, participants responded using a 7-point Likert-type scale ranging from 1 (Strongly disagree) to 7 (Strongly agree) (along with a 'do not know' option that was coded as missing). In all instances, mean scores were calculated, with relevant items reverse scored. Cronbach's alphas were calculated to assess the internal consistency with each cohort demonstrating strong internal consistency; pre- and post- Cronbach's **α** are reported in this paper. See Appendix A for complete course evaluation questionnaires.

Beliefs and attitudes were assessed using a self-created tool containing questions adapted from a previous unpublished study assessing training about colonialism in another context (Melro & Bombay, 2021). These questions were created with input from an Indigenous Advisory Committee comprised of individuals with expertise in Indigenous health. The two subscales were developed *a priori* based on committee input. The Cronbach's **α** are reported for each of the three cohorts given changes made to the survey items in each iteration (See Table 2).

Table 2

Cronbach's α for Causal Beliefs About Indigenous Peoples' Inequities

Causal Beliefs – *Historical aspects of colonization as a cause of health/social gaps*					
2019		**2020**		**2022**	
Pre	***Post***	***Pre***	***Post***	***Pre***	***Post***
.671	.667	.947	.864	.892	.909
Causal Beliefs – *Ongoing aspects of colonialism*					
2019		**2020**		**2022**	
Pre	***Post***	***Pre***	***Post***	***Pre***	***Post***
.859	.835	.548	.688	.819	.838

Attributions about the causes of Indigenous health and social inequities were assessed using 12 items that reflected two subscales. These include the following: *Historical aspects of colonization as a cause of health/social gaps* (6 items) based on mean responses to items such as 'The long-term effects of the Residential School system have been over-exaggerated in the media and/or society in general', 'Numerous policies put into place through the Indian Act over generations have contributed to the present-day health disparities affecting Indigenous Peoples', and 'It seems unlikely that the Residential School system has negatively affected the well-being of the children and grandchildren of those who attended these schools'. The second subscale reflected *ongoing aspects of colonialism* (6 items) determined by mean responses to items such as 'Indigenous Peoples in Canada receive the same or more funding for greater access to social and health services', 'Differences between Indigenous and non-Indigenous peoples in key social determinants of health such as income and education play a significant role in contributing to

health and social inequities between these groups', and 'Indigenous People in Canada have equal or more access to government-provided healthcare'. It is noted that that Cronbach's alpha coefficient in the 2020 cohort demonstrated a slight decline in scores (pre- Cronbach's **α**= .947, post– Cronbach's **α**=.864); although still within an acceptable range. It is possible that nuances of understanding derived from the training gave rise to more inter-item variability in the responses of this group following the intervention.

Blaming attitudes towards Indigenous Peoples were assessed using 8 items (pre- Cronbach's **α**= .835, post– Cronbach's **α**=.889) adapted from Gomez and Wilson (2006). Participants responded to items such as 'Most of the health and social problems of Indigenous Peoples are brought on by themselves'; 'Indigenous Peoples in Canada face unique historical, cultural, and social determinants of health associated with colonization that has affected their well-being'; and 'Indigenous Peoples in Canada face unique historical, cultural and social determinants of health associated with colonization that has affected their well-being'.

Perceived responsibility as a future healthcare provider was assessed in 4 items that were developed for this study (e.g., 'I have a social responsibility to work with Indigenous Peoples to improve their social and health conditions', and 'My mandate as a health professional does not include attention to the unique factors that may affect Indigenous Peoples, but is instead focused on providing equal care to all patients; pre- Cronbach's **α**= .890, post– Cronbach's **α**= .867). Nine items were developed for this study that assessed support for actions to reduce inequities, including the following example items: 'The federal government is spending too much on improving the living conditions of Indigenous Peoples'; 'Social policies for Indigenous Peoples, such as affirmative action, should not be instituted because they discriminate unfairly against others', and

'Indigenous Peoples should be treated like all Canadians and should not have any special benefits or rights to land or to hunt/fish' (pre- Cronbach's **α**= .884, post- Cronbach's **α**= .768).

4.8. Analysis

Statistical analyses were conducted using the Statistical Package for the Social Science (SPSS) version 27.0 (IBM Corp, 2019). Data were cleaned, with outlier scores (defined as 3 standard deviations above or below the mean score) removed. Data analysis was conducted in four phases. First, descriptive statistics (e.g., frequencies, means, variance) were provided for each of the measures, as well as associations with demographic characteristics. Second, mixed-measures analyses of variance (ANOVAs) were conducted to assess changes in response to exposure to the course (baseline vs. 3 months post-course) in each of the three course administrations (2019 vs. 2020 vs. 2022). Third, demographic predictors (e.g., health professional program, age, gender) of pre-post differences were assessed using multiple linear regression. Lastly, Pearson correlations were conducted within all three cohorts to identify relationships among outcome variables.

4.9. Results

4.9.1. Demographic Characteristics of Learner Population

In total, 335 (*M* age = 23.6 years, *SD* = 4.44) out of 1208 first-year learners responded to the pre- and post-survey (*n*=76 in 2019; *n*=154 in 2020; *n*=105 in 2022). As outlined in Table 3, the majority of learners identified as women and as non-Indigenous. Political views were only measured in the 2020 and 2022 cohorts, with the majority expressing left-leaning views, i.e., the New Democratic Party (NDP). A series of chi-square independence tests indicated that health professional program, (χ^2 (6, N = 304) = 74.33, $p < .001$), gender, (χ^2 (4, N = 304) = 110.86, $p <$ .001), Indigenous identity (χ^2 (2, N = 299) = 7.19, p=.028), and political views, (χ^2 (6, N = 238) = 21.48, p =.002), varied across the three cohorts (See Table 3), as did age, $F(1, 301) = 4.74$, p=

.030. The 2020 cohort had the highest representation of Indigenous students (11.2%), and expressed more liberal views (35.8%) compared to the 2022 cohort, which had the strongest NDP support (37.5%). The 2019 cohort was slightly older than the 2022 cohort, but neither differed in mean age from the 2020 cohort.

Table 3

Demographic Characteristics of Study Sample

	2019 (n= 76)	**2020 (n=154)**	**2022 (n=105)**
Health professional programs:			
Medicine	26 (34.2%)	44 (32.6%)	24 (22.9%)
Nursing	28 (38.8%)	73 (54.1%)	46 (43.8%)
Dentistry/Dental Hygiene	11 (14.5%)	17 (12.6%)	20 (19.0%)
Pharmacy	N/A	N/A	15 (14.3.%)
Gender:			
Women	47 (71.2%)	106 (79.1%)	87 (83.7%)
Men	19 (28.8%)	28 (20.9%)	15 (14.4%)
Non-binary	1 (1.3%)	N/A	2 (1.9%)
Mean age:	24.61 (19 to 39)	23.69 (19 to 44)	23.08 (19 to 40)
Indigenous identity:			
Non-Indigenous	60 (90.9%)	119 (88.8%)	94 (89.5%)
Indigenous	6 (9.1%)	15 (11.2%)	11 (10.5%)
Political views:	*Missing data		
Conservatives		4 (3.0%)	12 (11.5%)
Liberals		48 (35.6)	21 (20.2%)
New Democrat Party		39 (28.9%)	39 (37.5 %)
Green Party		23 (17%)	9 (8.7%)
None		N/A	21 (20.2%)
Other		18 (13.3%)	2 (1.9%)

*In 2019, respondents were asked how they would rate their political attitudes on a sliding scale between liberal (left wing) to conservative (right wing). We did not include these data in our analysis.

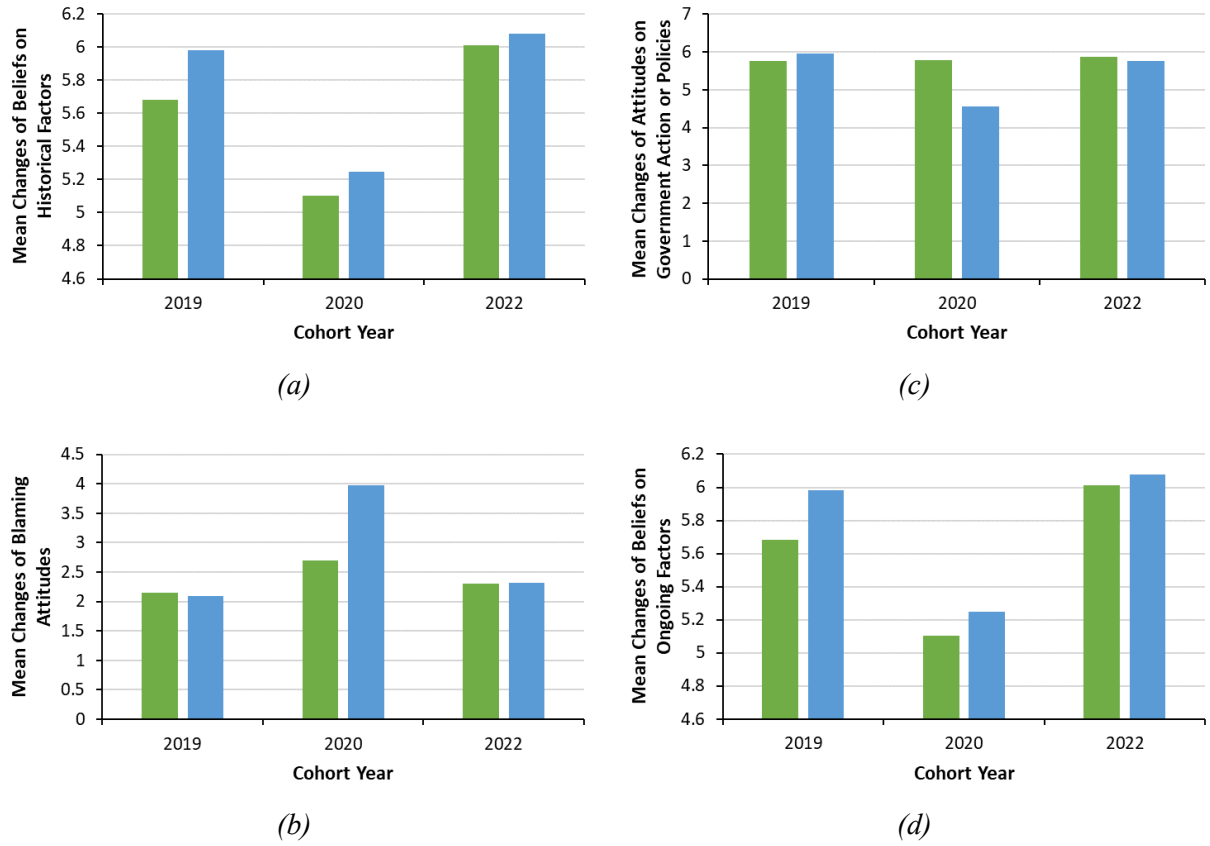
4.9.2. Intervention Effects

To determine whether causal beliefs, blaming attitudes, professional responsibility to address inequities, and support for government action or policies changed as a function of the educational intervention, a series of 2 (pre- and post-course) X 3 (cohort) mixed-measures analyses of variance (ANOVAs) were conducted. There were significant interactions suggesting that the intervention differentially affected the three cohorts in terms of learners' causal beliefs regarding historical factors of colonialism, F (2,273) = 2.79, $p < .001$, η^2=.020, blaming attitudes, F (2, 276) = 102.09, $p < .001$, η^2=.425, and support for government action and policies to address inequities, F (2,273) = 83.79, p <.001, η^2= .380. Simple main effects comparing the pre-post responses for each of the three cohorts revealed that following the intervention, learners in the 2020 cohort were *more* likely to believe that historical factors contributed to present-day inequities (Figure 1a); more likely to express blaming attitudes (Figure 1b); and less likely to support government action and policies to address inequities (Figure 1c). Even though these differences were not significant among learners in the 2019 and 2022 cohorts, they demonstrated a similar trend to the 2020 cohort. This interaction was not significant in relation to causal beliefs regarding ongoing factors, F (2, 273) = 1.43, p = .240, η^2=.020, or professional responsibility to address inequities, F (1, 223) = 3.07, p= .081, η^2= .014, nor were there significant main effects for the intervention itself on professional responsibility to address inequities, F (1, 223) = .001, p= .971, η^2= .000. However, there was a main effect for cohort for ongoing factors, F (2, 274) = 47.14, $p < .001$, η^2= .256. As illustrated in Figure 1d, beliefs that ongoing colonialism contributed to health inequities for Indigenous Peoples were less likely to be endorsed by learners in the 2020 cohort compared to those in the 2019 and 2022 cohorts, which did not differ from each other (with Tukey adjustment

for familywise error at $p<.05$). There was no significant main effect for cohort on taking professional responsibility to address inequities, $F(1, 223) = .001$, $p = .971$.

Figure 1

Mean levels of agreement on (a) causal beliefs - historical factors; (b) blaming attitudes; (c) support for government action or policies; and (d) causal beliefs - ongoing factors at baseline and 3 months following the educational interventions.



Note: Pre-course: green bar; Post-course: blue bar. Items were measured on a 7-point Likert-type scale, with ratings between 1 'Strongly disagree' and 7 'Strongly agree'.

4.9.3. Demographic Predictors of Responses to the Intervention

Multiple regression analyses were conducted to assess the demographic features that predict learners' responsiveness to the educational intervention. Based on the above reported interaction effects, separate analyses for each outcome variable at Time 2 (causal beliefs –

historical factors, blaming attitudes, support for government action and policies) was regressed onto levels at time 1 on the first step; followed by age (continuous), gender (male coded 0 vs. female coded 1), and Indigenous identity (non-Indigenous coded 0 vs. Indigenous coded 1) on the second step; dummy variables representing health professional program on the third; and dummy variables representing political views on the final step. By entering the variables in blocks, we were able to evaluate the added variance accounted for in the outcome variables. Regression coefficients in the final (4^{th}) step were the basis of our interpretations of the patterns of relationships.

The multiple linear regression model demonstrated that learners who had awareness of historical factors prior to the intervention were more likely to recognize historical factors as being an important causal belief as to why Indigenous Peoples are more likely to experience inequities following the intervention, $R^2 = .464$, $F(1, 214) = 184.88$, $p<.001$. However, none of the demographic variables predicted such beliefs (See Table 4).

The extent to which learners expressed blaming attitudes following the educational intervention was, not surprisingly, greater among those who held such attitudes at the outset, $R^2 = .146$, $F(1, 219) = 38.16$, $p<.001$. Demographic variables accounted for an additional 35.2% of the variability of post-intervention blaming attitudes. As illustrated in Table 4, males ($M_{adj}= 3.65$, $se = 0.069$) were more likely than females ($M_{adj}=2.53$, $se = 0.065$) to continue to express blaming attitudes following the intervention (means are adjusted for baseline scores). In addition, the intervention appeared to be differentially effective depending on whether the program learners were registered in, $R^2_{change} = .012$, $F(3, 210) = 6.11$, $p=.001$ (Table 4). Post hoc pairwise comparisons (with Tukey adjusted p-values to maintain family-wise α less than .05) indicated, following the intervention, that the dentistry and dental hygiene learners ($M_{adj} = 3.58$, $se = .090$)

were significantly *more* likely to express blaming attitudes than those in medicine (M_{adj} = 2.71, *se* = .111), nursing (M_{adj} = 2.87, *se* = .083), or pharmacy (M_{adj} = 2.19, *se* = .252). None of the other demographic variables was a significant predictor of changes in blaming attitudes.

Similarly, support for government action and policies was greater among those who expressed more supportive views at the onset of the course, R^2 = .179, $F(1, 215) = 46.93$, $p<.001$. Once again, as seen in Table 4, participant gender was significant, with females (M=5.68, *se*= .062) being more likely to express greater support for government social action and policies following the intervention (controlling for pre-intervention levels) than males (M=4.74, *se*= .065). The intervention also appeared to be more effective for learners in different programs, R^2_{change} = .027, $F(3, 209) = 27.435$, p=.001 (Table 4). Post hoc pairwise comparisons indicated support for government policies was lower among dentistry and dental hygiene students (M=4.79, *se*= .083) than among medicine (M=5.57, *se*= .102), nursing (M=5.35, *se*= .079), and pharmacy (M=6.04, *se*= .235) at $p< .001$. None of the other demographic variables was a significant predictor of changes in blaming attitudes.

Table 4

Final Step Unstandardized Linear Regression Coefficients Predicting Beliefs That Historical Factors Caused Inequities, Blaming Attitudes, and Support for Social Action or Policies

Causal Beliefs - Historical Factors				
F (3, 205) = 19.79, p <.001, Adjusted R^2 =.466				
Predictors	**β**	**SE**	***p***	**Zero order correlation**
Pre-course	.657	.047	.001	.681
Age	.050	.011	.348	.209
Gender	-.114	.113	.070	-.037

Indigenous identity	.005	.143	.916	.916
Political views[a]				
Conservatives	-.067	.192	.202	-.130
Liberal	-.046	.143	.676	-.002
Green	-.023	.108	.397	.052
Health Professional Program[a]				
Medicine	-.039	.133	.491	-.045
Dentistry	-.136	.121	.037	-.085
Pharmacy	.047	.202	.381	.085
Political views[b]				
Conservatives	-.067	.192	.202	-.130
Liberal	-.046	.143	.676	-.002
Green	-.023	.108	.397	.052

Blaming attitudes

F (10, 210) = 23.02, $p < .001$, Adjusted $R^2 = .500$

Predictors	**β**	**SE**	***p***	***Zero order correlation***
Pre-course	.331	.065	.001	.389
Age	.040	.011	.427	.034
Gender	-.431	.113	.001	-.601
Indigenous identity	.038	.149	.434	.019
Health Professional Program[a]				
Medicine	-.090	.136	.094	-.144
Dentistry	.114	.126	.072	.433

Pharmacy	-.151	.216	.003	-.313
Political views[b]				
Conservatives	.018	.194	.713	-.056
Liberal	.078	.149	.136	.097
Green	.107	.111	.041	.145
Support for government social action or policies				
F (10, 206) = 19.08, p < .001, Adjusted R^2 = .456				
Predictors	**β**	**SE**	***p***	***Zero order correlation***
Pre-course	.426	.053	.001	.423
Age	.027	.011	.613	.044
Gender	.450	.113	< .001	.508
Indigenous identity	-.004	.145	.932	.047
Health Professional Program[a]				
Medicine	.065	.132	.258	.093
Dentistry	-.043	.122	.514	-.350
Pharmacy	.156	.210	.004	.282
Political views[b]				
Conservatives	-.032	.194	.563	-.069
Liberal	-.002	.143	.971	-.037
Green	-.039	.109	.481	-.086

Note: *SE* Standard Error.

Coefficients are taken from the final step of the regression models.

[a] Three dummy variables were created to represent Health Professional Program with endorsements for each of Medicine, Dentistry, and Pharmacy coded '1' on the respective variable, and enrollment in Nursing coded as '0' on all three variables.

[b] Three dummy variables were created to represent political views with endorsements for each of Conservative, Liberal, and Green parties coded '1' on the respective variable, and endorsement of the New Democratic party coded as '0' on all three variables.

Correlations among outcome variables

Pearson correlation coefficients were conducted to assess the linear relationships among causal beliefs regarding the role of historical factors, blaming attitudes and support for social action or policies. There was a negative correlation between historical factors and blaming attitudes, r (283) = -.36, $p < .001$, suggesting that learners who were less willing to recognize the role of historical factors on health inequities were more likely to express blaming attitudes. Moreover, stronger support for government action or policies to address such inequities was associated with greater recognition of the causal effects of historical factors, r (282) = .52, $p < .001$, and lower inclination to express blaming attitudes, r (282) = -.88, $p < .001$.

4.10. Discussion

The primary aim of this study was to examine whether completing the *Introduction to Culturally-safe Care for Indigenous Peoples* course influenced health professional learners' causal beliefs about Indigenous inequities, intergroup attitudes, and responsibility to address inequities from baseline to 3 months post-training. Our findings indicate that there was a mix of intended and unintended outcomes found, but these were only observed in the 2020 cohort. Although these outcomes were unchanged after the course for the 2019 and 2022 cohort, learners in the 2020 cohort were more likely to believe that historical factors contributed to present-day inequities at the end of the course. However, in this same cohort, unexpectedly, blaming attitudes were more likely to be expressed towards Indigenous Peoples and learners were less likely to support government action and policies to address inequities. Clearly, there was something unique about

the 2020 cohort that may have contributed to their reactions. Indeed, they were less likely from the outset to indicate beliefs that ongoing factors of colonialism might be causing health inequities. This lack of recognition may reflect a lack of knowledge (that did not change in response to the intervention) or may have elicited reactance to efforts to bring about changed understandings. That said, the reason for these different outcomes in the 2020 cohort are unclear and may warrant more consideration of external or environmental factors that may influence course outcomes. It may also be possible that some subtle differences in the way the course was delivered could have affected these outcomes. Potential external or environment factors that occurred in 2020 that could contribute to these findings is the increased awareness, both globally and nationally, of social injustices towards outgroup members (e.g., Black Lives Matter Protests, the Mi'kmaw fishery dispute on Treaty Rights, the death of Joyce Echaquan) all occurred during the COVID-19 pandemic. Furthermore, the COVID-19 pandemic disproportionally impacted Black and Indigenous communities leading to higher death rates and negative social outcomes (Jensen et al., 2021; Thakur et al., 2020).

Gender differences on outcome variables were found within our study. For instance, results suggest that learners who identify as male in our sample are more likely to express blaming attitudes towards Indigenous Peoples. This finding is consistent with findings from a national public opinion survey of non-Indigenous Canadians who demonstrated that men were twice as likely to blame Indigenous Peoples themselves for the inequality they face compared to woman (Environics Institute, 2019). Similarly, gender differences or political views did not differ based on individual or structural attributions (Napier et al., 2018; Braun et al., 2020), which aligns with the findings of our study. Our study also suggests that women are more likely to express greater support for government social action and policies following the intervention, and that woman are

less likely to demonstrate blaming attitudes post-course – findings that align with other research (Bullock et al., 2003; Lynch et al., 2010; Kirst et al., 2017; Appelbaum et al., 2001; Niederdeppe et al., 2008).

Interestingly within our sample dentistry and dental hygiene learners were significantly *more* likely to express blaming attitudes, and were *less likely* to indicate support for government policies compared to those in the other health professional programs (i.e., medicine, nursing and pharmacy). It could be hypothesized that dentistry and dental hygiene programs lack broad curricula on the social and structural determinants of health in comparison to other health professional programs.

The findings from this study are consistent with research that found that the public is less likely to support social action and policies to address inequities when they attribute blame to individual victims rather than on the systems or social determinants of health that continue to perpetuate inequities (Appelbaum et al., 2001; Bullock et al., 2003; Lynch et al., 2010; Kirst et al., 2017; Niederdeppe et al., 2008). Attributions of causes of social conditions to individual or social factors are influenced by personal experience and socialization to norms and values from the groups in which individuals identify (e.g., cultural identity, socioeconomic status, political views) and related perceptions of deservingness (Niederdeppe et al., 2008). Thus, these observed patterns within this study with respect to blaming attitudes and support for government social action and policies may be due to learners' social identity or position. It has been suggested that attributions for events are grounded in individuals' social identities and are often relied on to justify our social worlds and maintain inequities (Jost, 2019; Major & Kaiser, 2017); furthermore, challenges to those beliefs might elicit affective reactions (e.g., denial and defensiveness; Mills et al., 2022; Thackrah & Thompson, 2013; 2018; Shah & Reeves, 2015). A mixed-methods design utilizing

survey and interview data could be employed to: 1) explore the relationship between learners' affective reactions (e.g., defensiveness) to educational interventions and their beliefs (e.g., system justification and causal beliefs), blaming attitudes, and support for addressing inequities; and 2) explore learners' perception of the course. This study design would advance the limited existing research on learners' perspectives about mandatory Indigenous health courses and the effect of the course on positively- or negatively- changing learners' beliefs and attitudes.

Motivational processes, particularly but not solely among advantaged groups (as our findings did not indicate differences between Indigenous and non-Indigenous learners), may evoke defensive reactions to justify historical and ongoing colonialism that are the root causes of Indigenous Peoples' outcomes by viewing existing social, political, and economic systems as fair and legitimate (Jost, 2019). System-justifying ideologies in which people are motivated to justify and rationalize the way things are by viewing existing social, political and economic (e.g., distal structural determinants of health) systems as fair and legitimate (Jost, 2019), may influence how learners engage with such content. These motivational processes may reflect cognitive biases (in attributing causality), enabling dominant group members to justify the neglect, powerlessness and social injustices that are the root causes of social outcomes (Jost, 2019).

Possible reasons for the increase in some learners blaming attitudes post-course include that learners might have romanticized notions of Indigenous Peoples and experience dissonance when they learn the reality of the historical misconceptions. This may have an unintended effect of evoking blaming attitudes and ingraining explanatory stereotypes as to why Indigenous Peoples experience inequities (Ly & Crowshoe, 2015). The timing of the post course survey in Spring of 2020 (May to June) aligns with the global protests on Black Lives Matters and as such, media coverage and heightened awareness of social injustices towards outgroup members may have

affected learners' responses or resistance to course material. For instance, in a New Zealand study, after first year students of the Bachelor of Health Sciences students completed a Maori Health Issues and Opportunities course, learners demonstrated factual learning about colonization, but continued to interpret the content through a deficit lens, suggesting that students were being observed to perpetuate 'charitable racism' after learning about the impact of colonization (Ahuriri-Driscoll, 2019). This finding demonstrates the need for careful pedagogical consideration of how the impact of colonization is taught to health professional learners, ensuring that they are critically reflecting on systems of oppression and privilege. Further, it is a reminder to educators that while seeking to present a clear and coherent narrative, there is the risk of oversimplifying and essentializing Indigenous Peoples that could lead to individual explanations versus structural and social explanations of causes of inequities that contribute to blaming attitudes. Many educational interventions are developed with a lack of theoretical frameworks, or rely on vague or unclear descriptions of the educational interventions. As such, targeted interventions should be intentionally developed with explicit consideration and description of the theoretical frameworks used to challenge ingrained causal beliefs and attitudes, and should continue to be monitored for both intended and unintended changes to inform the development of educational interventions.

4.10.1. Limitations and Future Opportunities

In addition to the strengths of this study, there are limitations that warrant discussion. As is common to self-report studies, although we employed confidentiality measures to protect the participants' identity, a social desirability response bias may have occurred, particularly given the fact that some topics covered in the course were potentially sensitive and polarizing. This may have influenced the findings of the study as it could have acted as a suppressor variable, whereby significant relationships are hidden given learners' responses to causal beliefs and victim-blaming

attitudes towards Indigenous Peoples in socially-desirable ways. A response bias could have potentially contributed to a ceiling effect, as learners scored high on causal beliefs (historical and ongoing), support for government action or policies, and perceived responsibility pre-course in the 2019 and 2022 cohort. Future research should include robust scale development of the novel measures under investigation in this dissertation. The lack of validated measures, along with the potential ceiling effect observed, limits our ability to form conclusions about the effects of the curriculum on learners' beliefs.

There was likely a selection bias of those who participated in the course evaluation compared to those who opted out, as participation was optional. A selection bias may have affected the findings of this study as the voluntary group may not be representative of the general health professional learner body. For instance, learners who participated in the study predominately supported left-leaning political groups. Research demonstrated that those who hold conservative ideologies are resistant to social change (Jost & Hunyady, 2005) and may not wish to participate in research on views towards Indigenous People. Furthermore, women were more likely to participate in the study, which is not uncommon in research (Smith, 2008). In both instances (i.e., political support and gender), this research is unable to capture differences between left-leaning and right-leaning political groups, between genders, or the interaction between gender and political groupings in order to determine if educational content is differentially effective in challenging or unintentionally ingraining false causal beliefs and negative intergroup attitudes towards Indigenous Peoples.

Finally, as within any closed-survey format, participants were limited in their responses and unable to provide their own narratives. As such, we may have missed nuance and additional information that could have been helpful in understanding some of the beliefs and attitudes

expressed. An iterative process to survey development was followed to create the measure of *causal attribution beliefs about the causes of Indigenous health and social inequities* instrument, lending it some validity for tapping into key perspectives. However, given the novelty of this measure, each iteration of the survey (and hence cohort) had small adjustments to item wording (See Appendix B for iterations in survey items). The items in Appendix A were the latest version used with the 2022 cohort. Future research would benefit from a mandatory evaluation with more rigorous application of common measures and experimental design, including a comparison group to determine the effect of the educational intervention on dispelling false beliefs and challenging negative attitudes towards Indigenous Peoples in health professional programs. A longitudinal study would help to address the inherent limitations to cohort studies by studying learners as they progress through their health professional training. Longitudinal studies would allow researchers to better explore which types of content, pedagogical approaches, and how much exposure about Indigenous Peoples is required for change and maintenance of such changes in beliefs, attitudes and support for change. As such, a longitudinal study might help identify curriculum or system barriers to changing beliefs, attitudes and behaviours.

4.11. Conclusion

Despite recommendations by health professional schools and practicing license bodies to embed Indigenous cultural competency and anti-racism education in *all* university programs (TRC 2015), the question remains: What are the intended and unintended effects of Indigenous educational interventions are on learners' beliefs, attitudes and perceived responsibility? This study found no effects in two learner cohorts, and an unintended negative effect in one cohort, wherein the learners' blaming attitudes, sense of professional responsibility, and support for government social action and policy *worsened* at the end of the course. Implementation of such

content should continue to be accompanied by rigorous research and evaluation that explores how and under what conditions attitudes change (if at all) across the health professional education journey. Particularly, we call for more realist evaluations in which researchers advance the course-based literature from merely asking Does it work? to What works? For whom? In what contexts?

Declarations

Ethics approval and consent to participate

The present study was exempt from Dalhousie University Research Ethics Board (REB) as it is reporting on a course evaluation. Although the study was exempt from REB approval, consent was obtained from each participant prior to participating in the study.

Consent for publication

Not applicable.

Availability of data and materials

The datasets generated and analyzed for this study are not publicly available.

Competing interests

Not applicable.

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Authors' contributions

CM & AB designed and conducted the original study; KM assisted with the analysis and interpretation of the results. CM wrote and prepared the manuscript. All Authors were involved in reviewing manuscript drafts and have approved the final manuscript.

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Chapter 5: Manuscript 2

This chapter presents the manuscript-based study submitted to *Advances in Health Science Education* journal on October 6, 2022; this manuscript reports on the scoping review undertaken to map and analyze existing evaluation studies on educational interventions that teach historical and ongoing colonialism in Canada, Australia, New Zealand, and the United States to identify evidence-informed approaches.

As the first author, I was responsible for the study design, analysis and development of the manuscript included below.

5.1. Abstract

Purpose: Indigenous education curriculum has been implemented in health professional programs as a potential solution to addressing commonly-held false beliefs, as well as negative social attitudes and behaviours. As such, it is important to map and analyze the current literature on educational initiatives that teach about historical and ongoing colonialism as a determinant of health to identify commonly-used theoretical frameworks and outcomes assessed, as well as the intended and unintended short- and long-term outcomes on health professional learners' beliefs, attitudes and behaviours.

Method: Six databases (CINAHL, MEDLINE, PsycInfo, Sociological Abstracts, ERIC, and ProQuest Dissertations and Theses) were searched with grey literature included through hand-searching of Indigenous journals and citation searching for papers published up until 2022 based on an established search criteria. Two reviewers independently screened articles.

Findings: In total, 2731 records were identified and screened; full text was assessed for 72 articles; 14 articles were identified as meeting all the inclusion criteria and included in the final review. Commonly-used theoretical frameworks were transformative learning and cultural safety, with a

variety of evaluation tools used and post-intervention outcomes measured across the studies (e.g., knowledge, beliefs, attitudes, behaviour, and general learner feedback).

Discussion: Indigenous education interventions require longitudinal evaluation studies to address shortcomings in the design and evaluation of outcomes associated with teaching about colonialism as a structural determinant of health. It is critical that we identify and illustrate both intended and unintended consequences of such curriculum as we attempt to change health professional learners' false beliefs and attitude, in hopes to inform their future care practices.

The effect of health professional programs inclusion of historical and ongoing colonialism in Indigenous contexts on learner's beliefs, attitudes, and perceived behaviour: A scoping review.

5.2. Introduction

Health professionals' and learners' beliefs, attitudes and behaviours can have negative or potentially fatal outcomes for Indigenous Peoples (Kitching et al., 2020; Leyland et al., 2016). Beliefs and attitudes of healthcare providers contribute to neglect towards Indigenous patients. Patient neglect affects both procedural (e.g., not seeing a patient in a timely fashion) and caring behaviours (e.g., lack of empathy), both which negatively affect patient health outcomes and the care they receive (Reader & Gillespie, 2013). Two contemporary examples in Canada, namely the experiences of Brian Sinclair and Joyce Echaquan, demonstrate the significant consequences and the urgency of anti-racism strategies and interventions to address patient neglect within the healthcare system. Both Indigenous patients died while accessing medical attention. Brian Sinclair died of patient neglect while he waited to be triaged after being referred to the emergency department for having a blocked catheter. Healthcare staff working in the emergency room dismissed Sinclair; he died 34 hours after arriving without being treated (Canadian Broadcasting

Corporation, 2017). While Echaquan died as a result of health professionals' negative attitudes and causal beliefs as to why Echaquan was in hospital. Ms. Echaquan was experiencing stomach pains, but healthcare professionals assumed she was either in *withdrawal from illegal drugs, stupid, or only good for sex and she would be better off dead* (Cecco, 2020). These were the remarks shown in a Facebook Live video filmed by Ms. Echaquan moments before dying. In both instances, Sinclair and Echaquan were provided with second-class treatment in Canada.

To combat harmful and detrimental beliefs and behaviours, Indigenous education interventions have been implemented in health professional programs in order to bring about positive changes that improve Indigenous Peoples' health and social outcomes. Educational interventions are designed with the guidance of various theoretical frameworks (e.g., anti-racism strategies, cultural safety and cultural competency) and content about Indigenous Peoples (e.g., cultural practices, colonialism, racism, and privilege), but little is known about the effectiveness of such interventions on beliefs, attitudes and behaviours. The purpose of this scoping review is to map and analyze the current research landscape of educational interventions in health professional programs that address the historical and ongoing effects of colonialism in Canada and countries that share similar colonial histories (i.e., the United States, Australia and New Zealand). With this knowledge synthesis, we can better identify gaps in the design and evaluation of educational interventions that teach about colonialism as a root cause of the inequities Indigenous Peoples experience to identify intended and unintended consequences on health professional learners' beliefs, attitudes and behaviours.

There are few tools within the literature to guide the development of content, learning approaches and integration of Indigenous-specific educational interventions for addressing health and social equity in health professional programs. The few authors who have provided

documentation for developing and integrating content have emphasized the social and structural determinants of health (Jones et al., 2019; Sharma et al., 2018), dispelling false beliefs (Pedersen et al., 2008; Pedersen et al., 2011), and creating cultural awareness (Durey, 2010). Similarly, it has been suggested that effective curricula include opportunities for critical reflection (Allan & Smylie, 2015; Braun et al., 2020), focus on Indigenous Peoples' voices (Mills et al., 2018), and interactive and experiential learning opportunities (Beavis et al., 2015). Within these approaches, it is important for health professionals and learners to learn about the root causes of inequities and structural determinants of health, as false beliefs or negative social attitudes can have a detrimental influence on the healthcare of Indigenous Peoples.

Given the dominant Euro-Western ideologies that underpin healthcare systems and health professional education programs in settler colonial countries, health professionals and learners often prioritize Western biomedical models. These models tend to medicalize and attribute health and social outcomes to individual factors (e.g., genetics, behavior, culture, lifestyle) rather than to social factors (e.g., colonialism, economical, political). As a result, the complex relationships among history, social, economic, and political factors that may constrain services, resources, opportunities, and even respect are under-emphasized (Browne & Smye, 2002; Reading & Wein, 2009). Even when social determinants are part of the curriculum, it has been suggested that they are often taught as a "laundry list" of factors rather than encouraging an understanding of the interconnectedness of social identities (e.g., gender, ethnoracial status, social economic status) and having learners critically examine and reflect on these dynamics (Sharma et al., 2018). Moreover, social determinants of health are often taught as disadvantaging certain populations rather than everyone being both positively or negatively affected by the social determinants of health. For instance, poverty is often taught as a social determinant of health whereas wealth (e.g., privileging

certain populations health and social outcomes) is not.. In doing so, the belief that health inequities are inevitable among populations at risk is perpetuated, and the opportunity is lost to have health professional learners challenge such beliefs and attitudes and build the required skills to enact social change to work towards health equity (McCartan et al., 2020; Thackrah & Thompson, 2013). In contrast, if a psychologically-safe space to illuminate and scrutinize cognitive biases and stigma through critical reflection was created, the possibility of changing attitudes and beliefs might be enhanced (Braun et al., 2020). This said, we know little about how causal beliefs and social attitudes are targeted in Indigenous educational interventions. This is important as general education raising awareness of cultural traditions and health access disparities has the potential to further ingrain stereotypes of Indigenous Peoples, particularly if the curriculum does not tie in the role of colonialism as a root cause of health and social disparities experienced by Indigenous Peoples (Downing et al., 2011; Downing & Kowal, 2011).

The purpose of this scoping review is to map and analyze the current research landscape of educational interventions that address the historical and ongoing effects of colonization in Canada and countries that share similar colonial histories (i.e., the United States, Australia and New Zealand) within health professional programs to inform future curriculum development and critically evaluate intended and unintended consequences of educational interventions on Indigenous Peoples.

Within this paper, terminology and meanings used in referring to Indigenous Peoples are important. The countries that are focused on in this review have similar British colonial histories, but each country has unique terms to describe the First Peoples. In Canada, the term Aboriginal is perceived as a government-coined term linked to colonialism and the destruction of Indigenous Peoples' identities, loss of language, loss of ownership of land, and other colonial acts (Kurtz et

al., 2018). The term Indigenous commonly refers to First Peoples globally, regardless of government and geographical borders, constitutions and legal definitions (Kurtz et al., 2018), and is the term commonly-used in this paper. However, the terms in this paper will be in accordance with the terminology used by the cited authors.

5.3. Methods

The scoping review protocol is guided by the Preferred Reporting Items for Systematic Reviews and Meta-analysis extension for Scoping Reviews (PRISMA-ScR; Tricco et al., 2018) and the Joanna Briggs Institute's (JBI) prescribed methodology for scoping reviews (Peters et al., 2015). This review was not registered as an official JBI scoping review due to limited availability of necessary JBI-specific workshops at the time of conduct. Within scoping review methodologies, there is a reliance on official guidelines due to a belief that they improve rigour and transparency in conducting and reporting scoping reviews, and as such consistency of practice is enhanced by strict adherence to these recommendations. Yet, there are limitations to the strict adherence to objective guidelines such as the knowledge sources that make up the peer-reviewed literature that is heavily relied on for systematic and scoping reviews. Euro-Western terminology and worldviews within the scoping review process are often prioritized and do not allow room for engagement with more holistic, integrated and critical approaches offered by other ways of knowing and doing (Chambers et al., 2018). As such, Chambers and colleagues (2018) stressed the importance of a more fluid and interpretive process at every stage of the review process. For this reason, we considered it important to provide the research team's positionality as allied settler researchers who conduct Indigenous health research and created reflexive dialogical spaces within the review process. These dialogical spaces created opportunities for the reviewers to reflect on their learning, (un)learning, and re-learning about Indigenous Peoples in Canada, the sources

where that learning occurred, and the content that challenged existing knowledge on the causes of Indigenous Peoples' health and social inequities. We recognized this as an important step in decolonizing the review process. By acknowledging the positivist paradigm and the reliance on procedural objectivity that underly the scoping review process, we incorporate critical reflexivity within the process (Chambers et al., 2018).

This scoping review sought to map the following questions:

- What theoretical frameworks have been used in educational interventions to teach about historical and ongoing colonialism as the root causes of the health inequities experienced by Indigenous Peoples?
- To what extent do the reported educational interventions describe the curriculum about colonialism?
- What approaches, methods, tools, and frameworks have been used to evaluate the effectiveness of training/education regarding Indigenous Peoples in Canada, the United States, Australia, and New Zealand?
- What post-intervention outcomes (e.g., knowledge, beliefs, attitudes, perceived behavioural changes) are commonly assessed?
- What are the short- and long-term outcomes of these interventions?

5.3.1. Researcher Positionality

Researchers' backgrounds, identities and worldviews affect the ways that they navigate their work and relationships with Indigenous Peoples. As Euro-Canadian settlers with a common interest in improving the legacy of colonialism with Indigenous communities in Canada, we seek to inform other non-Indigenous readers, both formally and informally, through research and education on the historical and ongoing legacy of colonialism in Canada and the intergenerational

impacts on Indigenous Peoples. All three authors have extensive community-based experience, learning and working in service to Indigenous communities to understand the lasting impact of colonialism on health and social outcomes.

5.3.2. Search Strategy

Searches of the literature employed a combination of subject headings (MeSH terms) and pre-determined filters identified within the literature for other cultural-safety reviews (Clifford et al., 2015; Guerra & Kurtz, 2017; Mills et al., 2018) and for other allied health and social care reviews (Hirt, 2020). Search terms captured three primary themes:

1) Educational content within post-secondary or higher education (e.g., structural determinants of health, cultural safety, anti-stigma interventions);
2) Indigenous populations who share similar colonial histories (e.g., Aborginee, American Indian, Maori); and
3) Health and social service learners (e.g., social workers, allied health professionals, those in disciplines such as nursing and medicine).

Databases for the literature search included CINAHL (accessed via EBSCO), MEDLINE (accessed via Ovid), PsychInfo (accessed via EBSCO), Sociological Abstracts (accessed via ProQuest), ERIC (accessed via ProQuest), and ProQuest Dissertations and Theses (accessed via ProQuest). Finally, manually searches through reference lists and Indigenous journals (e.g., *International Journal of Indigenous Health*, *First Peoples Child and Family Review*, *Journal of Indigenous Well-being*) for related studies was conducted, and articles were scanned using the same criteria. Within each database, search terms were consistent. The subject terms were unique based on each database's thesaurus for the three primary themes (See Appendix C).

5.3.3. Eligibility Criteria

Papers were included if they were published in 2000 or later, based on research conducted within Canada, Australia, New Zealand, or the United States, and must have been available in English. A preliminary search conducted in MEDLINE (accessed via OVID) yielded a total of 2419 articles for screening. This preliminary search in one database was to inform the criteria for the years of inclusion and exclusion. The year 2000 was identified based on cultural competency gaining popularity in the early 2000s (Clifford et al., 2015). Thus, the search was carried out in all databases with the inclusion of those articles published in 2000 or later. Articles had to include details on the educational intervention and describe an evaluation plan. Conceptual, theoretical and methodological papers were not included unless there was an empirical component of the paper, as we were interested in understanding the effects of various educational training interventions frameworks and methods on learner outcomes.

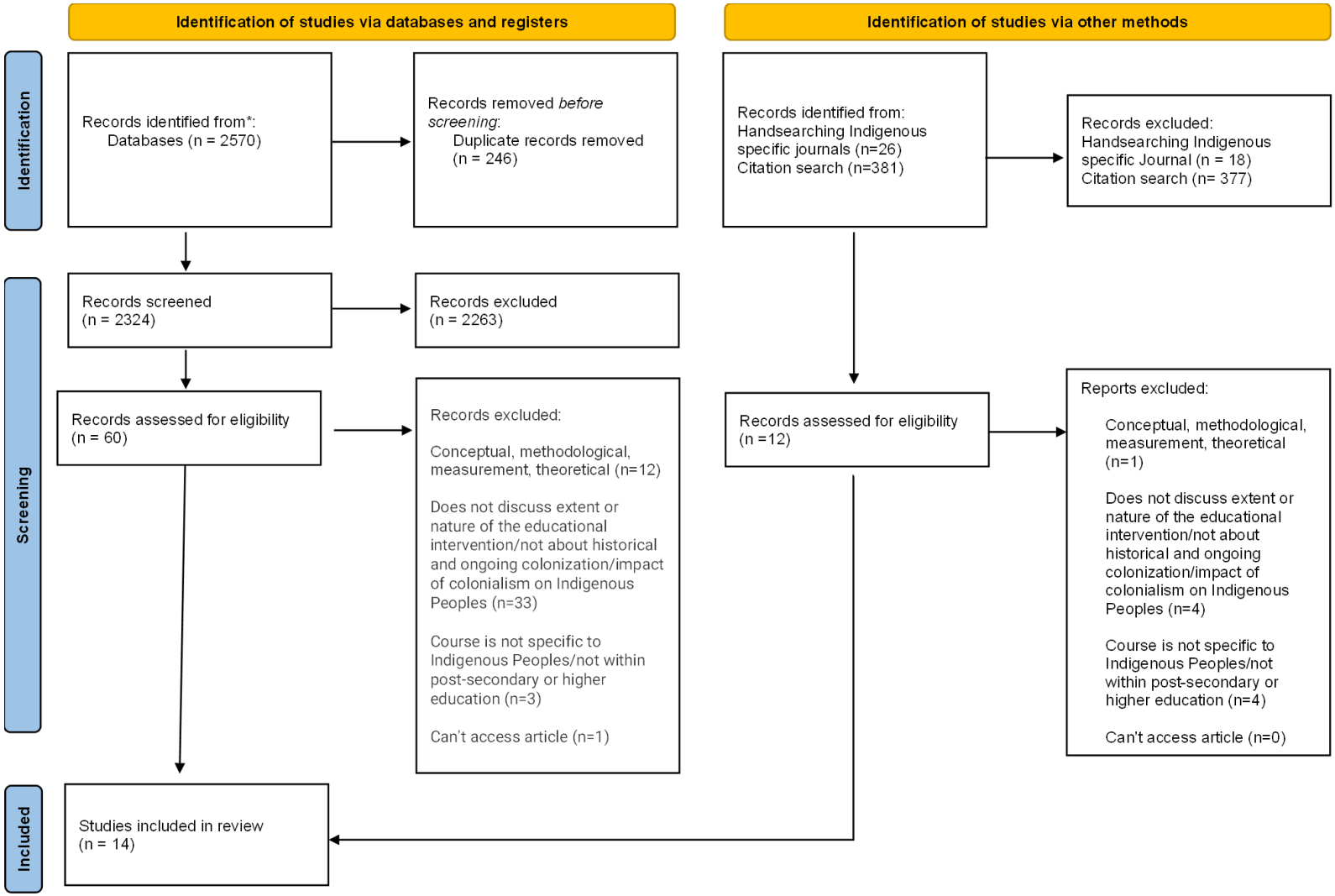
5.3.3.1. Identification and Screening of Publication Records

As indicated in Figure 2, the Preferred Reporting Items for Systematic Reviews and Meta-analysis extensions for Scoping Reviews (PRISMA-ScR) guided the decision-making for this review (Tricco et al., 2018). The resulting literature from each of the aforementioned databases was uploaded to the systematic review software 'Covidence' (Covidence Systematic Review Software, 2022). The initial database search identified 2570 records. An additional 26 articles were selected through a manual search of Indigenous journals and a total of 381 articles were identified by means of citation searching of the included review articles. The authors made the decision to include grey literature within Canada based on CM's experience in evaluating and developing Indigenous health content in Canada. After duplicates were removed, a total of 2731 records were initially screened, with 2658 excluded based on the inclusion/exclusion criteria identified in Table

4. Screening of titles and abstracts was performed independently by two reviewers (CM & JL). Reviewers met more frequently at the beginning of the screening process to review discrepancies as a calibration exercise. They then met on a regular basis to resolve conflicts by consensus (KM was available if needed to resolve any conflicts). A total of 72 full text articles were screened with exclusion reasons identified in Figure 2. Following the same process by the same two reviewers, full text was screened for the same inclusion and exclusion criteria (See Table 5). At this stage, articles were excluded if they did not include content on historical and ongoing colonialism, or if they were not an empirical study. After the exclusion of 58 articles with reason (See Figure 2), a total of 14 articles were included in this scoping review.

Figure 2

PRISMA flow chart for search screening



We were most interested in evaluations of educational interventions that teach about the historical and ongoing effects of colonialism, as well as the outcomes for learners. We recognize the richness of experiential learning and the value of cultural or community immersion programs for building relationships between non-Indigenous and Indigenous people. Although only these types of educational programs were included in this review, unless they described teaching or learning opportunities regarding historical and ongoing colonialism prior during or after the experiential learning experience. Programs were excluded from this review if they focused on a single learning event (e.g., attending a cultural event; Benson et al., 2015; Power et al., 2020; Svarc et al., 2018; West et al., 2021).

Table 5

Eligibility Criteria to Determine Inclusion of Articles in Scoping Review

Inclusion criteria	**Exclusion criteria**
- Published in 2000 or later	- Published in 1999 or earlier
- Available in English	- Not available in English
- Non-Indigenous learners	- Indigenous learners
- Discusses the educational intervention specific to teaching about the historical and ongoing colonization/impact of colonialism on Indigenous Peoples	- Does not discuss extent or nature of the educational intervention/not about historical and ongoing colonization/impact of colonialism on Indigenous Peoples
- Within post-secondary or higher education	- Not within post-secondary or higher education
- Study population in Canada, US, Australia, or New Zealand	- Not within Canada, US, Australia, or New Zealand
- Empirical study	- Conceptual, descriptive, methodological, Measurement, Theoretical or evidence syntheses (e.g., meta-analysis, systematic reviews)

5.3.4. Data Extraction/ Reflexive Dialogical Spaces

CM extracted relevant information regarding study design, learning objectives, theoretical frameworks, and methods; key results were charted, with JL reviewing for accuracy. Extracted

data and content summaries were recorded in an Excel chart (See Supplementary Material). A template of the extraction tool is appended (See Appendix D).

5.3.4.1. Data Charting and Analysis

As summarized in Supplement Material, we extracted excerpts to demonstrate findings from each article retained in the review. If there were missing data, the box was filled with "unable to interpret". Charting included excerpts to qualitatively describe the nature of the educational intervention and the associated outcomes of participating in this intervention. We did not assess the quality or methodological rigour of included studies.

Narrative and thematic analyses of the results and discussions of the included studies was completed to identify intended and unintended consequences associated with the Indigenous educational interventions. Codes were generated to categorize the training description, theoretical frameworks, evaluation methods, and outcomes. Studies were grouped by type of theoretical framework and outcomes were measured to identify the ways in which educational interventions may or may not have affected beliefs, attitudes and behaviours among learners, including effects over time when applicable.

5.4. Findings

The findings are organized into two main sections. The first section highlights the characteristics of included studies within the review (e.g., location, setting, educational interventions, research/education team positionality, and evaluation design) to help with the interpretation of the data in relation to the review objectives. The second section highlights the research objectives of this review (e.g., theoretical frameworks, content on colonialism, evaluation approaches, post-intervention outcomes).

5.4.1. Characteristics of Included Studies

Included articles are summarized in Supplementary Material. A total of six studies were conducted in Canada (Bernhardt et al., 2011; Herzog et al., 2021; Jamieson et al., 2017; Oosman et al., 2019; Shah & Reeves, 2015; Zhou et al., 2012), seven studies in Australia (Hunt et al., 2015; Isaacs et al., 2016; Jackson et al., 2016; Mills et al., 2022; Thackrah & Thompson, 2013; 2018; Thackrah et al., 2015) and one study undertaken in the United States (Alexander-Ruff & Kinion, 2019), all published between 2011 and 2022. No study that met the inclusion criteria focused on Māori Peoples of New Zealand. Targeted health professional programs were diverse, with learners studying nursing (Alexander-Ruff & Kinion, 2019; Hunt et al., 2015; Isaacs et al., 2016;), medicine (Herzog et al., 2021; Zhou et al., 2012), audiology and speech-language pathology (Bernhardt et al., 2011), physical and occupational therapy (Jamieson et al., 2017; Oosman et al., 2019), and general health program (Mills et al., 2022; Shah & Reeves, 2015). Three studies described multidisciplinary health cohorts but included predominantly midwifery students (Jackson et al., 2013; Thackrah & Thompson, 2013; 2018; Thackrah et al., 2015). Most of the learning experience was in a classroom setting (Bernhardt et al., 2011; Herzog et al., 2021; Hunt et al., 2015; Isaacs et al., 2016; Jackson et al., 2013; Jamieson et al., 2017; Mills et al., 2022; Shah & Reeves, 2015; Thackrah & Thompson, 2013; Thackrah et al., 2015; Zhou et al., 2012), or a hybrid between in-class preparation and community experience (Alexander-Ruff & Kinion, 2019; Oosman et al., 2019; Thackrah & Thompson, 2018).

Learning opportunities often focused broadly on Indigenous Peoples within the respective countries (Hetzog et al., 2021; Hunt et al., 2015; Isaacs et al., 2016; Jackson et al., 2013; Jamieson et al., 2017; Mills et al., 2022; Shah & Reeves, 2015; Thackrah & Thompson, 2013; 2015; Thackrah et al., 2018; Zhou et al., 2012) or a specific geographic area (Alexander-Ruff & Kinion,

2019; Bernhardt et al., 2011), with few learning opportunities focusing on one specific Indigenous identity group (Oosman et al., 2019). The majority of included studies were mandatory courses required as part of the learners' health discipline program (Alexander-Ruff& Kinion, 2019; Bernhardt et al., 2011; Herzog et al., 2021; Isaacs et al., 2016; Jackson et al., 2013; ; Thackrah & Thompson, 2013; 2018; Thackrah et al., 2015; Zhou et al., 2012), with few studies offered as an elective practicum option (Oosman et al., 2019). In some instances, there was not enough information provided (Hunt et al., 2015; Jamieson et al., 2017; Mills et al., 2022; Shah & Reeves, 2015). The format of the interventions ranged from workshops (Herzog et al., 2021; Jackson et al., 2013; Shah & Reeves, 2015) or units within a course (Hunt et al., 2015; Jamieson et al., 2017; Mills et al., 2022' Zhou et al., 2012) to a semester-long course focused entirely on Indigenous health and colonialism (Bernhardt et al., 2011; Isaacs et al., 2015; Thackrah & Thompson, 2013; 2018; Thackrah et al., 2015). The practicum interventions had varying timeframes, ranging from clinical placements lasting between 1 week (Alexander-Ruff & Kinion, 2019) to 4-6 weeks (Oosman et al., 2019). Shah and Reeves (2015) conducted their intervention over 5 semesters, presenting workshops to multiple health professional classes each semester. Interventions that took attendance ranged from 5 to 944 enrolled learners, although others that did not take formal attendance estimated up to 1,500 enrolled students (Shah & Reeves, 2015).

The most commonly-cited evaluation approaches were pre-post survey design (Alexander-Ruff et al., 2019; Hunt et al., 2015; Jamieon et al., 2017; Mills et al., 2022; Shah & Reeves, 2015; Thackrah et al., 2015; Zhou et al., 2012), descriptive studies (Bernhardt et al., 2011; Herzog et al., 2021; Jackson et al., 2013), and case studies (Oosman et al., 2019; Thackrach & Thompson, 2013; 2018). A cross-sectional survey design (Isaacs et al., 2016) was the least commonly-cited evaluation approach. No studies reported using a randomized control trial.

5.4.2. Positionality of Research/Education Teams within the Literature

Given our research team's positioning as settler allied health researchers of Indigenous health, we explored whether authors of the included studies positioned themselves. The majority of articles included information on positionality of the research/education team, though four articles did not provide enough information to interpret (Alexander-Ruff & Kinion, 2019; Hunt et al., 2015; Jamieson et al., 2016; Shah & Reeves, 2015). Of the studies that provided information, two described the entire teaching team as self-identifying as Indigenous (Bernhardt et al., 2011; Zhou et al., 2012), with the other teams having a mix of Indigenous and non-Indigenous members (Bernhardt et al., 2011; Herzog et al., 2021; Isaacs et al., 2016; Jackson et al., 2013; Mills et al., 2022; Oosman et al., 2019; Thackrah & Thompson, 2013; 2018; Thackrah et al., 2015).

Within the mixed teams, an emphasis was placed on existing relationships between Indigenous and non-Indigenous scholars and community members, with one study highlighting that all non-Indigenous teaching staff had undergone cultural safety training, worked in Indigenous communities in some capacity, and had been approved by local Elders to teach on their behalf (Isaacs et al., 2016). Mills and colleagues (2022) privileged Indigenous knowledge by grounding their research within the traditional language spoken by the lead author, a Kamilaroi woman, researcher and educator, to "*actively resist settler colonialism, and remain linked to culture, land, dreaming, histories and Elders*" (p2). This process of Indigenization naturalizes Indigenous knowledge systems within health professional programs, which is necessary to transform spaces, places, and hearts to actively resist colonialism. This transformation occurs through the epistemological principle of holism, in which Indigenous pedagogies focus on the development of the learner as a whole, as well as on place-based and intergenerational learning (Antoine et al., 2018). Mills and colleagues' (2022) inclusion of Indigenous languages and connection to land and

Elders within the development of educational content reflected the importance they placed on Indigenous Peoples' voices, ways of knowing, and self-determination in an effort to counter their historical and ongoing silencing within Western-based education. Integration of Indigenous knowledge and languages strengthens holistic learning as it engages in the four Indigenous knowledge domains: emotional, spiritual, cognitive, and physical (Antoine et al., 2018). Within educational interventions, the focus tends to be on the cognitive domain of learning, whereas Mills and colleagues (2022) focused on the emotional and spiritual domains. This approach highlights that Indigenous and western knowledge can co-exist within health professional programs. While it is ideal for students to learn from Indigenous faculty, the increase in health professional programs including Indigenous content may mean that this is not feasible without putting considerable load onto Indigenous faculty. Few studies acknowledged the lack of Indigenous faculty in health programs (Jamieson et al., 2017) or on the burden of introducing Indigenous content into curricula on Indigenous faculty. However, it is assumed that academic institutions require that Indigenous faculty members must be experts in all matters pertaining to Indigenous Peoples, and how this assumption is harmful because it discounts the heterogeneity among Indigenous communities (Jackson et al., 2013). We will now explore findings based on the specific research objectives of this review.

5.4.3. Objective 1: Identify Theoretical Frameworks used in the Development and Implementation of Educational Interventions

All except one study explicitly mentioned or described a theoretical framework in the development of the intervention, with most courses using a blend of frameworks, as outlined in Supplementary Material. A breakdown of the theoretical frameworks employed is shown in Table 6. Of the courses that included a community placement, two out of three interventions described

the importance of the Four Rs framework (i.e., Respect, Reciprocity, Relevance, and Responsibility; Bernhardt et al., 2011; Oosman et al., 2019). The framework emphasizes the importance of understanding and engaging in Indigenous research, along with ethical practices based on Indigenous worldviews emphasizing the importance of understanding and engaging in Indigenous research and ethical practice based on Indigenous worldviews.

Table 6

Cited Theoretical Frameworks

Theoretical framework	**Citations**
Transformative Learning Theory.	Alexander-Ruff & Kinion, 2019; Jackson et al., 2013; Mills et al., 2022.
Critical reflection/critical consciousness and culturally informed theories.	Herzog et al., 2021; Oosman et al., 2019.
Culturally-informed theories (e.g., safety, competency, awareness, sensitivity, security).	Bernhardt et al., 2011; Hunt et al., 2015; Isaacs et al., 206; Jamieson et al., 2017; Shah & Reeves, 2015; Thackrah & Thompson, 2013; 2018; Thackrah et al, 2015.

5.4.3.1. Strengths-based vs. deficit-based approach

Two studies described using a strengths-based approach (Jackson et al., 2013; Oosman et al., 2019), with only one shedding light on the need to balance the dominant western health discourse that positions Indigenous Australians as "*non-compliant and vulnerable*" by sharing "*positive and affirming images of the strength and resiliency of Australian Indigenous Peoples*" (Jackson et al., 2013). Within a community practicum, Oosman and colleagues (2019)

acknowledged the importance of highlighting community strengths. Further, only one article explicitly mentioned the use of an Indigenous methodology as part of the immersive activity, specifically, the traditional practice of talking circles (Herzog et al., 2021). Although Oosman and colleagues (2019) incorporated sharing circles at the end of the community practicum (a recognized Indigenous method within the literature), the authors did not position the method within an Indigenous epistemology as part of their strength-based approach. For all other articles, we were unable to identify any considerations of a strength-based approach.

5.4.3.2. Creating Safe Spaces for Dialogue and Critical Reflection

Several researchers emphasized the importance of learners engaging in critical reflection to understand the root causes of inequities (Alexander-Ruff & Kinion, 2019; Bernhardt et al., 2011; Jamieson et al., 2017; Mills et al., 2022; Shah & Reeves, 2015; Thackrah & Thompson, 2013). A few studies described the importance of creating space for learners to engage in dialogue with peers and educators (Alexander- Ruff & Kinion, 2019; Herzog et al., 2021; Jackson et al., 2013), reflective journaling (Bernhardt et al., 2011; Mills et al., 2022), or a combination of reflective assignments and dialogue with peers (Oosman et al., 2019; Thackrah & Thompson, 2013). Two studies used reflective journaling to assess learners' understanding and critical analysis of the influence of historical and sociopolitical determinants of Indigenous Peoples' health and social outcomes (Bernhardt et al., 2011; Mills et al., 2022). However, Bernhardt and colleagues (2011) reported that the reflective journal was optional in subsequent offerings with the other option being the creation of an arts project because it was recognized that not all learners like to 'write journals' but may prefer to express themselves in other ways. A prominent theme throughout this subset of studies was creating safe spaces for dialogue.

Several studies indicated the need to create a space that was non-judgemental and allowed learners to explore their thoughts, feelings and perspectives in meaningful ways to learn from each others' experiences. More specifically, studies that described the importance of creating a "*safe space*" for learners varied in their description of how such spaces were created (Alexander & Ruff, 2018; Bernhardt et al., 2011; Herzog et al., 2021; Thackrah & Thompson, 2013). Two described the importance of creating a collaborative agreement on how challenging conversations would be conducted (Thackrah & Thompson, 2013) or the establishment of a 'group norms' contract (Alexander-Ruff & Kinion, 2019). Alexander-Ruff and Kinion (2019) suggested that "*the contract allowed students to explore comments in a safe environment and navigate beyond awkward moments"* (p.118), and that the contract assisted "*instructors [to] avoid overcorrecting or embarrassing a student learner"* (p.118). For instance, the contract was helpful in navigating a situation wherein, "*one student observed significant levels of tooth decay and reflected with her peers,* '*Why don't they just brush their teeth?*' (p.118; Alexander-Ruff & Kinion, 2019).

Bernhardt and colleagues (2011) created space through a series of reflective journals, in which students respectfully reflected on three cultural experiences from their community/agency visits. The authors' objective of using this format was to help learners:

> (1) Safely and constructively address any fears, guilt, anger, confusion, dilemmas, questions, strengths, and strategies that the student may have when learning about cultural identities, colonialism, racism, and race-based privilege; and (2) think about how these feelings and issues may affect methods in service provision in audiology or speech-language pathology (Bernhardt et al., 2011, p.183).

The main instructor of the course "*Approaches to audiology and speech-language pathology for people of First Nations, Métis or Inuit heritage*" shared that the reflective journal was a learning tool and not used for assessment. Learners were assessed on completion of the three entries, but not on the content written since these reflections were viewed as constituting the

"*individual's journey*" (p.183; Bernhardt et al., 2011). As such safe spaces were described as engaging in dialogue with peers or the use of reflective journaling; in both instances, the reflective practice was not assessed.

Only one study acknowledged the safety of Indigenous staff as a central concern (Jackson et al., 2013). The authors reported that the integration of Indigenous content within the health professional program prompted self-reflective questions for Indigenous academics, such as:

> Am I emotionally and spiritually strong enough to tell my story to a group of strangers? What sort of response am I expecting from a group of non-Indigenous people? Will they learn from me, and what will I learn from them? (p.107).

Such an observation recognizes the emotional burden placed on Indigenous academics when health professional programs rush to implement Indigenous content into curriculum.

Within the included literature, most educational interventions were informed by a theoretical framework, with an emphasis on creating spaces for learners to critically reflect on their beliefs, attitudes and emotions in relation to the course content. A variety of tools and processes were identified to foster critical reflection within an educational intervention, ranging from social agreements to utilizing reflective journals. Yet, only one study explicitly mentioned the need to challenge dominant Euro-Western discourses. Without doing so, there is a risk of entrenching negative explanatory stereotypes of Indigenous Peoples. To diminish this risk, it may be necessary to convey counter-stereotypical images of Indigenous Peoples while highlighting the historical and ongoing effects of colonialism.

5.4.4. Objective 2: Identify to What Extent Colonialism Content was Included and Defined in the Educational Intervention

Colonialism content was similar across studies in relation to implications for contemporary healthcare issues and cultural beliefs in health contexts (see Table 2). Only one intervention

(Herzog et al., 2021) focused solely on teaching about colonialism by utilizing an immersive KAIROS Blanket Exercise followed by a guided Talking Circle. Other learning opportunities taught about colonialism in relation to contemporary healthcare issues (Alexander-Ruff & Kinion, 2019; Hunt et al., 2015; Jamieson et al., 2017; Mills et al., 2022; Shah & Reeves, 2015), while others still discussed colonialism in relation to cultural beliefs in health contexts and specific professional practice issues (Bernhardt et al., 2011; Oosman et al., 2019; Thackrah & Thompson, 2013; 2018; Thackrah et al., 2015; Zhou et al., 2012).

Table 7

Included Educational Content

Content	**Citations**
Colonial history.	Herzog et al., 2021.
Colonialism in relation to contemporary healthcare issues.	Alexander-Ruff & Kinion, 2019; Hunt et al., 2015; Jamieson et al., 2017; Mills et al., 2022; Shah & Reeves, 2015.
Colonialism in relation to cultural beliefs in health contexts and specific professional practice issues.	Bernhardt et al., 2011; Oosman et al., 2019; Thackrah & Thompson, 2013; 2018; Thackrah et al., 2015; Zhou et al., 2012.

5.4.4.1. Variations of Colonialism Content based on Theoretical Frameworks

The theoretical framework of the educational intervention informed the framing of the included colonialism content. For instance, educational interventions using a transformative learning theory to develop their pedagogical approaches often attempted to reframe attitudes and beliefs about Indigenous Peoples by having learners critically reflect upon their own identity and

privilege (Alexander-Ruff et al., 2019; Herzog et al., 2019; Jackson et al., 2013; Mills et al., 2022; Oosman et al., 2019). One intervention described learners' desire to '*vicariously*' experience and critically reflect upon how oppressive and racist policies affect Indigenous Peoples and communities by viewing life history documentaries of Indigenous Peoples' experiences with trauma (Jackson et al., 2013).

Educational interventions developed through a cultural safety lens (Issacs et al 2016; Jamieson et al., 2017) focused on teaching about what was lost or disrupted by colonialism. They tended to do this by incorporating Indigenous traditions, cultures, worldviews, and knowledge into the curriculum. For example, Thackrah and Thompson (2013) developed an educational intervention through a cultural safety and security lens that focused on past policies and practices and the importance of First Peoples' cultural values within health service delivery, and provided specific professional practice issues. In the 2018 publication reporting the same intervention, they prioritized a cultural security lens "*as it has its origins in an Australian Aboriginal Context*" (p.182; Thackrah & Thompson, 2018). Using a cultural safety or security pedagogical approach, learners were encouraged to reflect upon "*their own cultural values or emotional responses to diverse histories, cultures, worldviews, values, and contemporary events related to Indigenous Peoples*" (Jamieson et al., 2017) with less emphasis placed on reflecting upon the root causes of inequities or assimilation of Indigenous Peoples or the privileges they and their families currently enjoy as a result of settler colonialism.

5.4.5. Objective 3: Identifying Evaluation Frameworks, Methods and Tools

5.4.5.1. Theoretical Evaluation Frameworks

Only two out of the 14 studies identified an evaluation plan that was informed by a theoretical framework (Alexander-Ruff et al., 2019; Herzog et al., 2021); none of the other

interventions explicitly mentioned a theoretical or conceptual framework. Both applied a critical or cultural consciousness framework to inform the general methodology and evaluation methods, including the more specific assessment of changes in beliefs and attitudes (Alexander-Ruff et al., 2019; Herzog et al., 2021). This framework choice was likely, given the shared underpinnings and goals with engaging in the process of reflective awareness, understanding of the structural roots of inequality, developing positive sociopolitical attitudes, and commitment to social justice. For instance, Alexander-Ruff et al., (2019) coded for the effect the clinical immersive experience had on a learner's cultural consciousness within their reflective journals as it related to learners' recognition of privilege. In particular, they were looking for a demonstration that learners were reframing the causes of Indigenous Peoples' inequities from individual blame-focused outcomes (e.g., blaming Indigenous Peoples for their health and social outcomes) to the recognition of structural causes of inequality. In a recent study carried out by Herzog et al. (2021), the evaluation and educational intervention were informed by both a cultural safety and critical consciousness framework, chosen due to their shared grounding in "acknowledging one's sociopolitical context, interrogating power imbalances, and praxis" (p.1439) and informed the evaluation method by identifying central concepts within learners' reflective responses.

5.4.5.2. Evaluation Methods, Outcomes and Tools

Evaluation was optional for learners in the majority of studies (Bernhardt et al., 2011; Herzog et al., 2021; Hunt et al., 2015; Isaacs et al., 2016; Jackson et al., 2013; Jamieson et al., 2017; Mills et al., 2022; Shah & Reeves, 2015; Thackrah et al., 2013; 2018; Thackrah et al., 2015; Zhou et al., 2012), with only one study that deemed the evaluation to be compulsory for learners (Alexander-Ruff & Kinion, 2019). The majority of studies used a mixed-method post-intervention survey involving a combination of Likert scales and open-ended questions or written reflections

(Alexander-Ruff & Kinion, 2019; Herzog et al., 2021; Hunt et al., 2015; Jackson et al., 2013; Jamieson et al., 2017; Mills et al., 2022; Shah & Reeves, 2015; Thackrah et al., 2015). Others used a combination of classroom observations, surveys and interviews (Thackrah & Thompson, 2013; 2018), or combined focus groups and individual surveys (Bernhardt et al., 2011). One study utilized only interviews (Oosman et al., 2019), while two relied only on quantitative survey data (Isaacs et al., 2016; Zhou et al., 2012).

Outcomes were assessed in several ways. Commonly-measured outcomes centered on five categories: beliefs and attitudes (Alexander-Ruff et al., 2019; Mills et al., 2022; Thackrah & Thompson, 2013; 2018; Thackrah et al., 2015), learners' emotional reactions (Mills et al., 2022; Thackrah & Thompson, 2013; Thackrah & Thompson, 2018; Shah & Reeves, 2015), knowledge change and interest working with Indigenous Peoples (Herzog et al., 2021; Jamieson et al., 2017; Oosman et al., 2019; Shah & Reeves, 2015; Zhou et al., 2012), views on Indigenous content (Isaacs et al., 2016), and general feedback on the course design and activities (Bernhardt et al., 2011; Jackson et al., 2013). Only one study measured changes in all three categories: knowledge, beliefs and attitudes, and interest working with Indigenous Peoples (Hunt et al., 2015). Half of the evaluations focused on knowledge change and interest in working with Indigenous Peoples (7 studies) with only about a third of the studies measuring the effects of the educational intervention on changing deep-seated beliefs and social attitudes towards Indigenous Peoples (5 studies). None of the evaluations included behavioural outcomes.

While there was an overlap in outcomes identified across studies, there was no overlap in the evaluation tools across studies. Studies that evaluated changes in beliefs and attitudes used were a variety of validated self-report measures of Attitudes Towards Indigenous Peoples (Hunt et al., 2015), the modified White Racial Identity Attitude Scale (Alexander-Ruff et al., 2019), or

an Attitude Thermometer (Thackrah & Thompson, 2013; 2015). Only one study (Thackrah et al., 2015) mentioned including a statement assessing causal beliefs, "*the state of Aboriginal health is mainly due to a lack of funding for health services*", regarding structural factors that influence Indigenous Peoples' health outcomes. The majority relied on qualitative methods to identify and document changes in learners' causal beliefs about the role of colonialism in relation to current health outcomes, particularly with respect to reflecting upon their own background and socialization as well as their own experiences that shape their values, attitudes and behaviours (Mills et al., 2022; Thackrah & Thompson, 2013; Shah & Reeves, 2015). It was reported that the inclusion of content pertaining to historical and ongoing colonialism could have caused unease or resistance among students with no previous exposure or knowledge (Mills et al., 2022; Thackrah & Thompson, 2013; Shah & Reeves, 2015). However, no study explored the association between learners' unease or resistance and changes in their beliefs and attitudes towards Indigenous Peoples. Only Thackrah and colleagues (2015) indicated measuring learner perceptions of their social responsibility to work towards changes in Indigenous health. Given the heterogeneity in evaluation frameworks, methods and tools, it is challenging to derive a conclusive statement regarding the impacts of such interventions.

While all interventions taught about historical and ongoing colonialism, only one focused solely on colonialism in Canada (Herzog et al., 2022), with all other educational interventions including other content areas (e.g., social determinants of health, privilege and racism, Indigenous knowledge, cultural practices). As such, comparisons of results across studies were challenging in terms of what features and how much content on historical and ongoing colonialism was needed within the intervention to evoke changes in beliefs and attitudes.

With the exception of one, all studies identified a theoretical framework for the development of the content of the educational intervention, and only two (out of 14 studies) used theoretical frameworks in the design of their evaluation of the intervention. In both instances, the evaluation plan was informed by a critical or cultural consciousness framework. While there was an overlap in outcomes identified across studies (e.g., beliefs, attitudes, emotional responses, knowledge change, views towards Indigenous content) there was no overlap across studies in the evaluation tools used to assess outcomes. Learner outcomes were measured using a variety of validated self-report measures along with qualitative methods.

5.4.6. Objective 4: Post-educational Intervention Outcomes: the Short; and Long-term Outcomes

Of the educational interventions that measured changes in self-reported knowledge, beliefs and attitudes were shown to favorably improve attitudes towards Indigenous Peoples (Alexander-Ruff & Kinion, 2019; Herzog et al., 2022; Hunt et al., 2015; Thackrah & Thompson, 2013). The learners in Herzog and colleagues (2021) study overwhelmingly (99%) agreed or strongly agreed that the KAIROS Blanket Exercise enhanced their knowledge of Indigenous Peoples' history in Canada. More specifically, 98% of learners agreed or strongly agreed that the exercise gave them a greater awareness of the impact that colonization has had on Indigenous Peoples, with almost half of learners (48%) highlighting the importance of learning about this history to gain a greater understanding of Indigenous cultural contexts. Learners discussed how the activity encouraged them to critically reflect on their biases and stereotypes regarding Indigenous Peoples, with many recognizing their social responsibility to work towards Indigenous health equity (Herzog et al., 2021). Another study found that educational interventions that included content on colonialism elicited changes of scores on the White Racial Identity Attitude Scale (Alexander-Ruff & Kinion,

2019), suggesting that learners' awareness of their role in creating and maintaining oppressive systems, as well as the need for them to act responsibly by dismantling systemic racism through a framework of power and privilege, increased as a result of the intervention. These quantitative findings resonated with qualitative analyses of learners' reflective journals, which often conveyed recognition of privilege, suspension of judgement, reframing the situation, and cultural consciousness (Alexander-Ruff & Kinion, 2019). Similarly, Hunt and colleagues (2015) found a decrease in negative attitudes towards Australian Indigenous Peoples, and an increase in scores on knowledge, interest, and confidence in working with Australian Indigenous Peoples.

Thackrah and Thompson (2013) found that after a tutorial, learners' attitudes towards Indigenous Peoples increased in a favourable direction on an Attitude Thermometer (i.e., 10° intervals ranging from 0° (extremely unfavourable) to 100° (extremely favourable), with the mid-point of 50° representing neither favourable nor unfavourable attitude); the change, however, did not reach statistical significance. Similarly, others found an increase in favourable attitudes and knowledge about Aboriginal history, culture and health, along with a heightened awareness of the role played by structural factors on health outcomes immediately following an intervention (Thackrah & Thompson, 2018; Thackrah et al., 2015). When followed up a year or two after they participated in the educational intervention, the positive shifts in attitudes and in knowledge among midwifery learners were not sustained long-term (Thackrah & Thompson, 2018; Thackrah et al., 2015); to the contrary, there was a decline in knowledge about Indigenous issues and a significant drop in positive attitudes towards Indigenous Peoples, with a more pronounced decline two years after they participated in the course. These findings suggest that the influence of the intervention dissipated over time and was lost even before learners entered professional or clinical practice. This could be due to the limited integration of Indigenous content across the program or to

contradictory hidden curricula within health professional programs. However, this was the only educational intervention to include a measurement of long-term outcomes of the educational interventions, and so information is limited.

Isaacs et al. (2016) did not assess changes in beliefs and attitudes with two self-selected learner groups (i.e., those enrolled in an Aboriginal Health Unit and those who were not). However, more students who completed the Aboriginal Health Unit reported having a good understanding of Aboriginal health as a result of their participation. Among those students who did not complete the intervention, knowledge was limited, and was reported to have been derived from mainstream media.

In sum, the short-term outcomes of educational interventions appeared to improve attitudes towards Indigenous Peoples, yet when long-term outcomes were measured, results suggest that the improvements in attitudes and knowledge were not sustained. However, only one educational intervention measured the long-term effects and thus conclusive statements cannot be made on the long-term effect of Indigenous educational interventions on learner outcomes.

In summary, the most commonly-used theoretical frameworks used in the design of educational interventions was transformative learning theory, critical reflection/critical consciousness, cultural safety, and cultural security. The extent to which colonialism content was included in the educational interventions was similar across studies including historical and political aspects, the social determinants of health, discussions on racism and privilege, and the link between colonialism and contemporary health issues experienced by Indigenous Peoples. Not surprisingly, the theoretical framework (e.g., transformative learning vs. cultural safety/security/competency) informed the structure of the content. As for evaluation approaches, only two studies described using a theoretical framework to guide the development of the

evaluation plan. In both instances, the evaluation was informed by critical reflection/critical consciousness. Commonly-assessed post-intervention outcomes included knowledge change followed by beliefs and attitudes towards Indigenous Peoples, yet there was variation in how outcomes were assessed across studies. When studies included long-term evaluations of the post-intervention, the positive effects diminished, suggesting a return to baseline (or worse) attitudes towards Indigenous Peoples.

5.5. Discussion

Consistent with the findings of cultural safety and competency reviews, there are few published evaluations of health professional educational interventions that convey historical and ongoing colonialism on Indigenous Peoples. Most studies were published within the last decade, aligning with the recent calls to teach about colonialism as a root cause of Indigenous Peoples' inequities (Allan & Smye, 2015; National Inquiry into Missing and Murdered Indigenous Women and Girls, 2019; Truth and Reconciliation Commission of Canada, 2015). The results of this review suggest that teaching about the effects of colonization were effective in changing healthcare learners' attitudes and increasing knowledge immediately following the intervention (Alexander-Ruff & Kinion, 2019; Herzog et al., 2022; Hunt et al., 2015; Thackrah & Thompson, 2013). This said, we know little about how change translates into clinical practice given the lack of monitoring changes in beliefs, attitudes and behavioural outcomes over time. The one educational intervention that did monitor long-term changes found that the effects diminished over time (Thackrah et al. 2015; Thackrah & Thompson, 2018). It is possible that short-term changes revert to original beliefs and attitudes due to constant exposure to negative messages among peers, family and media (Pedersen & Barlow, 2008). It is also possible that while the knowledge and attitudes went back

to baseline with later exposure to relevant situations, the changes originally elicited by such exposure may become evident (compared to those who never had such knowledge).

5.5.1. Strengths and Limitations of Interventions

The educational interventions in the studies included in this review all incorporated content about colonialism, yet theoretical frameworks, evaluation approaches, and outcomes varied. Even studies designed using the same theoretical framework evaluated different outcomes. This heterogeneity in the design and evaluation of the educational curriculum makes it difficult to derive empirically-based conclusions regarding effectiveness. Exposure to content regarding colonialism further differed depending on the duration of the intervention. This said, the current review found that, despite the varying theoretical and pedagogical frameworks applied in the creation of Indigenous educational curriculum, content on colonialism appeared to contribute to changing beliefs and reduce negative attitudes, particularly when learners critically reflected on their misconceptions and stereotypes of Indigenous Peoples.

Critical or cultural consciousness (Alexander-Ruff et al., 2019; Herzog et al., 2021) were the only explicitly-identified theoretical or conceptual frameworks used in the development of the evaluation plans included in this review. Critical consciousness entails a process of reflective awareness and understanding of the structural roots of inequality, the development of positive sociopolitical attitudes, and commitment to social justice. In healthcare education and practice, critical consciousness involves fostering critical self-reflection on the causal attributions of disparities (e.g., individual versus structural causes) experienced by Indigenous Peoples, and on the meaning of such disparities for the social roles and responsibilities of healthcare providers. The argument for critical reflection for making salient actors' positionality in terms of power and privilege is not novel (Allan & Smylie, 2015), yet many of the included studies did not include

any theoretical or conceptual framework, much less a critical consciousness framework in their design and evaluation approach. Given the tendency to use indirect or vague language within studies is problematic, as we were unable to infer if or which theoretical frameworks were used in the development of course evaluations. Further, we were unable to decipher what the authors meant when they used certain terminology. For instance, when authors would refer to critical reflexivity or critical reflection, it was often unclear what they intended or meant by these conflated terms within the literature (See Ng et al., 2019 for a discussion), and how this influenced the educational interventions outcomes.

Studies that used a critical or cultural consciousness framework to inform the development of the evaluation plan included assessments of changes in beliefs and attitudes (Alexander-Ruff et al., 2019; Herzog et al., 2021). Evaluation of such psychosocial outcomes reflects the shared underpinnings and goals of engaging in a process of reflective awareness and understanding of the structural roots of inequality, development of positive sociopolitical attitudes, and commitment to social justice. However, further research is needed to determine how critical consciousness is achieved in healthcare, including robust empirical evaluations of curriculum and learners' beliefs. Indeed, the one study that measured causal beliefs regarding the role of structural factors on Indigenous Peoples' health outcomes revealed that changes dissipated one or two years after the course (Thackrah et al., 2015). It is worthy to note that the educational intervention in this study was informed by a culturally-safe or culturally-secure framework rather than by a transformative learning theoretical framework. The interventions that were informed by a transformative learning framework were found to result in the reframing of attitudes and beliefs about Indigenous Peoples by having learners critically reflect upon their own identity and privilege. Those framed from a culturally-safe framework were more likely to highlight what Indigenous Peoples lost as a result

of colonialism rather than how historical and ongoing colonialism continues to oppress Indigenous Peoples and privilege settlers.

Aligning with cultural safety (focuses on Indigenous Peoples as recipients of care) or a culturally secure framework (intended to maintain Indigenous cultural values within health service delivery), attention to Indigenous cultural knowledge and practices can be valuable to healing and health outcomes for Indigenous Peoples (Hadjipavlou et al., 2018; Varcoe et al., 2017). Nevertheless, they risk perpetuating cultural stereotypes or explanatory stereotypes as to why Indigenous Peoples experience inequities (Ly & Crowshoe, 2015), rather than questioning how Euro-Western systems continue to oppress Indigenous Peoples. Objectifying Indigenous cultures, identifying them as 'Other' and as the cause of health and social differences can lead to blaming Indigenous Peoples for their poor health and social outcomes (Ahuriri-Driscoll, 2019). To avoid contributing to and perpetuating the processes, practices and systems of oppression, non-Indigenous peoples must be aware of and understand these processes (Downing & Kowal, 2011). As Alexander and Ruff (2018) demonstrated, without a clear understanding of the root causes of health and social outcomes experienced by Indigenous Peoples, learners may attribute blame to Indigenous Peoples' behaviour and fail to recognize and understand the contribution of colonial social and political policies. Further research would benefit by exploring the effectiveness of teaching about historical and ongoing colonialism on changing causal beliefs regarding Indigenous Peoples' inequities.

Reflexive dialogical spaces are guided by the Four-R framework (i.e., Respect, Reciprocity, Relevance, and Responsibility; Kirkness & Barnhardt, 1991) and focus on providing spaces for critical reflection on biases, attitudes and sociopolitical ideology in relation to the root causes of Indigenous Peoples' health and social outcomes. Although articles included in this

review emphasised or described “safe spaces” (Herzog et al., 2021; Alexander & Ruff, 2018; Thackrah & Thompson, 2013) as underpinning effective change in beliefs and attitudes, we suggest moving the discourse towards creating a ‘brave space’ (Arao & Clemens, 2013) that encourages a pedagogy of constructive discomfort for non-Indigenous people when engaging with colonial trauma content. This aligns with a transformative learning theory, as it suggests that the process of effecting change requires openness and willingness to consider the views, experiences, beliefs, and perspectives of others (Mezirow, 2003). Despite being based on a qualitative evidence base, transformative learning theory is one of the prominent adult learning theories (Taylor, 2007), and has been incorporated into the design of some Indigenous educational interventions (Alexander-Ruff & Kinion, 2019; Jackson et al., 2013; Herzog et al., 2021; Mills et al., 2022; Oosman et al., 2019). When critical reflection (a key component of transformative learning theory) was qualitatively assessed in learner’s reflective journals (Alexander-Ruff et al., 2019; Herzog et al., 2021) to identify how their frames of references regarding the causes of health and social inequities, there was evidence of a shift in beliefs and attitudes towards Indigenous Peoples. However, the long-term effects of such reflections were not assessed. Understanding how transformative learning influences learners’ longer-term outcomes may have significant implications in the design of educational interventions regarding Indigenous Peoples.

5.5.2. Reflexivity in Review Process

Similarly, for our calls for reflexive dialogical spaces to be created within educational interventions within health professional programs, we too engaged in the process. Throughout the process, both reviewers engaged in reflexive dialogical spaces by enacting the “Four Rs” that are fundamental to the ethical practice when working with Indigenous Peoples (Kirkness & Barnhardt, 1991). We did so by respecting Indigenous Peoples’ unique history given colonialism; ensuring

reciprocity within the process by recognizing that Indigenous and Western knowledge is equivalent and complementary by deliberately searching Indigenous journals for relevant articles; by acknowledging our responsibilities as non-Indigenous researchers regarding the importance of educating our colleagues about the historical and ongoing effects of colonialism on Indigenous Peoples' health outcomes; and by refraining from placing this burden on our Indigenous colleagues. In addition, when we engaged in reflexivity, we asked ourselves and each other questions about the effects of identity, power and privilege between Indigenous Peoples and settlers (ourselves) in Canada, and how the included articles positioned and framed Indigenous Peoples' issues in relation to settler privilege and the affordances of settler colonialism. As such, we were particularly intrigued about how various theoretical frameworks were used to inform the development of content, particularly the causes of health and social disparities in Indigenous contexts. Within the process, we also reflected upon our own experiences working with and in service to Indigenous communities. We gained knowledge through these experiences regarding what Indigenous communities perceive to be important for non-Indigenous peoples to understand.

The inequities experienced by Indigenous Peoples are shaped by the structures and attitudes established and sustained through post-contact colonial history. As such, this requires us to reflect on the terminology relied on to describe educational programming to rectify negative social attitudes by examining the use of the word 'intervention' as an anti-racism educational strategy. The inclusion of colonial history of Indigenous Peoples and their experiences as a result of settler colonialism should not be viewed as an *educational intervention* or a standalone program. but rather the inclusion of history that was erased or silenced within settler education systems. Framing the inclusion of colonial history as an intervention rather than being embedded within health professional programming can perpetuate the victimization of Indigenous Peoples. For

instance, “othering” can be a way of thinking that Indigenous Peoples ‘get what they deserve’ and continue to systematically discriminate against Indigenous Peoples. By being reflexive on the terminology used to describe educational programs that include Indigenous Peoples’ experiences with historical and ongoing colonialism, we could reduce the continual othering experienced by Indigenous Peoples by not viewing Indigenous Peoples as different or less-deserving, but rather including previously-silenced narratives within the educational systems.

5.5.3. Limitations of Review

Although a rigorous and thorough search strategy was used, there is the possibility that the review did not identify all relevant studies. For example, relevant evaluations may have been misclassified due to terminology or source. However, a high level of agreement between independent screeners suggests otherwise. Because a scoping review does not engage in an evaluation of the quality of the included records, we relied on what the authors reported to determine theoretical framework, approaches, methods, and outcomes assessed. As a result, authors may have used terms inconsistently, or labelled their methodology unclearly, in which case our descriptive categorization of the records may be incorrect. Lastly, since evaluations with statistically-significant findings or favourable outcomes (i.e., positive changes in attitudes) are more likely to be published, it is possible that the published evaluations included in this review overestimated the true effectiveness of interventions that teach about historical and ongoing colonialism (Easterbrook et al., 1991). As a result of a publication bias, there may be unanticipated consequences that ripple through the literature, shaping what evidence educators and researchers use to inform the development of their educational intervention. This can lead to the development of ineffective educational interventions, as they rely on studies that report positive statistically-significant findings or results that are socially favorable (knowledge change) compared to

evaluative findings that indicate that social attitudes do not improve following the educational intervention. For example, only one educational intervention (Thackrah & Thompson, 2018; Thackrah et al., 2015) included in this review reported that the course did not have the intended effect of positively changing attitudes towards Indigenous Peoples.

A limitation of this study could be the selection of the review type. A scoping review was chosen as the primary review method because it identified and explored the varying design considerations within educational interventions and evaluation plans that teach about Indigenous Peoples' experiences with colonialism in health professional education. This limits the analysis and advancement or development of a new theoretical framework within the literature, as the search often leads to a broader and less-defined search of the literature. The reliance on rigour and replicability could have limited the study by relying on Medical Subject Headings (MeSH) terms within the database search. Given the broad scope and heterogeneity within the literature, there is potential to miss articles, since the literature is emerging and may use differing terms and definitions to index studies. Another limitation of scoping reviews is that the analysis is often tabular, which enables basic descriptive analyses (e.g., frequency counts of concepts, population, location of studies; Peter et al., 2021), but does not encourage a critical evaluation of the included literature. However, within this chapter, a synthesis of the results and outcomes of the included studies was completed using qualitative techniques (i.e., narrative and thematic analyses). These were completed to help identify and clarify concepts within the design and evaluation of educational interventions to inform future research into developing robust evaluation studies on the intended and unintended consequences on learners' beliefs and attitudes.

5.6. Conclusion

The primary goal of this review was to map and synthesize educational interventions that teach about historical and ongoing colonialism, the impacts of colonization on Indigenous Peoples, and the effects on non-Indigenous health professional learners' beliefs, attitudes and behaviours. Evidence presented that reported that teaching about colonization on Indigenous Peoples was effective (Clifford et al., 2015; Jamieson et al., 2017; Shah et al., 2015), but more research is required to understand to what extent such content accounts for changes in beliefs, attitudes and behaviours, and the effectiveness of certain frameworks in designing programs that elicit positive changes. The development and wider application of standardized and validated survey measures to determine the effectiveness of Indigenous education programs is required to enable reliable comparison between studies. Lastly, given the heterogeneity of Indigenous education interventions, even among this small number of included studies, as more interventions are conducted and assessed, it may be possible to compare similar types of interventions (e.g., colonialism awareness, cultural practices, social determinants of health). By doing so, researchers can begin to understand why certain educational content, pedagogy and approaches may be more effective than others for changing non-Indigenous peoples' beliefs, attitudes and behaviours.

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Chapter 6: Discussion/Conclusion

This chapter, which contains a discussion about the original contributions and implications of this work, concludes the dissertation. In addition to the studies that comprise this dissertation, this chapter provides suggestions for a comprehensive research and evaluation agenda and directions for future design considerations in the assessment of health professional education interventions regarding Indigenous Peoples and colonialism.

6.1. Integrated Manuscripts

This dissertation comprised two integrated manuscripts. Together, these manuscripts contribute knowledge pertaining to the intended and unintended consequences of Indigenous-specific content in educational interventions on health professional learners' beliefs, attitudes and perceived need for change, as well as the theoretical and evaluation design considerations of such educational interventions. Theoretical threads of attribution theory (i.e., causal beliefs) are interwoven throughout the manuscripts linking scholarly discussion (or lack thereof) about the design of educational interventions and the evaluation of their intended and unintended consequences on health professional learner outcomes.

The first manuscript (Chapter 4, *Beliefs around the causes of inequities and intergroup attitudes among health professional students before and after a course related to Indigenous Peoples and colonialism*) illustrates a course-based inquiry into three cohorts of health professional learners enrolled in an *Introduction to Culturally-safe Care for Indigenous Peoples* course at an urban university in Canada. The course-based intervention was developed in response to the rush to implement health professional programs into the Truth and Reconciliation Commission's Calls to Action #22-24, which named education of healthcare professionals as critically important for:

i. the healthcare system to recognize the value of Aboriginal healing practices (#22);

ii. cultural competency training for all healthcare professionals (#23); and

iii. medical and nursing schools in Canada "to require all students to take a course dealing with Aboriginal health issues" (#24).

The results of this study revealed no effects of the interventions in two of the learner cohorts. While in a third cohort, both intended and unintended effects occurred, with the learners' blaming attitudes and their support for government social action and policy worsened at the end of the course; at the same time, they were more likely to acknowledge the effects of historical aspects of colonialism on health inequities. Although these findings align with research evaluating the effect of educational efforts aiming to improve intergroup relations in other contexts, they emphasize the importance of evaluating educational interventions that are intended to correct false beliefs towards Indigenous Peoples in Canada. The unintended effects on learner attitudes informed the inception of the second manuscript.

The second manuscript (Chapter 5, *The effect of health professional programs inclusion of historical and ongoing colonialism in Indigenous contexts on learner's beliefs, attitude, and perceived behaviour: A scoping review)* was a scoping review inquiring into existing research regarding Indigenous-focused educational interventions. The goal was to map and synthesize the current research landscape of educational interventions that included content regarding the historical and ongoing effects of colonization in Canada and in countries that share similar colonial histories (i.e., the United States, Australia, and New Zealand). The review identified common evaluation methods and outcome measures used, and the short- and long-term outcomes of post-educational interventions. The discussion noted the lack of published evaluations of health professional educational interventions that convey historical and ongoing colonialism on

Indigenous Peoples' health and social outcomes. The studies included in the review suggested that teaching about the effects of colonization were effective in eliciting short-term change in healthcare learners' attitudes and increasing general knowledge. However, we know little about how these effects translate into long-term attitudinal change and into future clinical practice given the lack of longitudinal monitoring of changes in beliefs, attitudes and behavioural outcomes.

6.2. Emergent Themes

Across the studies that constituted this dissertation, key themes characterizing the design of educational interventions that teach about historical and ongoing colonialism, and whereby the intended and unintended consequences of educational intervention were examined. Educational interventions within health professional programs often focus on standalone and brief educational modules on Indigenous Peoples (Melro et al., [Chapter 5]; Pitama et al., 2018), thus providing learners with limited exposure to content that is intended to challenge deep-seated beliefs and blaming attitudes. Persuading people to take political or social responsibility when they deny responsibility for causing inequities in the first place is difficult under the best of conditions (Subasic et al., 2008). Similarly, the evaluation of educational interventions often focuses on the self-reported knowledge improvement among learners, and certainly learners expressed an improvement in their knowledge of Indigenous Peoples' culture, health disparities and ongoing health impacts of past colonial events (Herzog et al., 2021; Hunt et al., 2015; Jamieson et al., 2017; Oosman et al., 2019; Shah & Reeves, 2015; Thackrah et al., 2015; Zhou et al., 2012). But we know little about how such self-evaluated knowledge relates to attitudes and behaviour, or about the long-term effects of how it translates into clinical practice among healthcare professionals.

Given the heterogeneity of the literature, we are unable to draw conclusive statements regarding the effects of educational interventions that teach about historical and ongoing

colonialism given the assortment of content, pedagogy, theoretical frameworks, and outcome measurements in the health professions literature. As such, what follows is a general discussion of observations made in Chapters 4 and 5. The general findings of both manuscripts are that studies, including our course-based inquiry, that utilized a pre- and post-course survey design, wherein the post-administration was not conducted immediately after the educational intervention (e.g., 3 months or 1 to 2 years later) demonstrated no change of unfavourable attitudes compared to baseline (Thackrah et al., 2013; 2015; 2018), or even worse, a greater inclination to express blaming attitudes (Chapter 4).

When comparing the educational interventions reported by Thackrah and colleagues (2013; 2015; 2018) as well as those from Manuscript 1, there are similarities between the educational interventions. First, both interventions were designed from a cultural safety theoretical framework and followed a similar course delivery (e.g., viewing of vodcasts or videos prepared specifically for the unit featuring diverse Indigenous speakers, use of case studies). Both focused on providing content on family structures, historical policies, Indigenous cultural beliefs and practices, and specific professional practice issues. In addition, they both emphasized the creation of safe spaces while teaching. Due to the breadth of content in both studies, we were unable to determine which factor (e.g., theoretical framework, course delivery, content, pedagogy) influenced the evaluative outcomes, if any. As such, what follows is a discussion of the need for critical and emergent evaluations within health professional programs as they rush to implement content on Indigenous Peoples' experiences with historical and ongoing colonialism.

At a conceptual level, there is significant variability in the development and implementation of educational interventions addressing the TRC's Calls to Action, and equally wide variations in the degree of rigour applied in program development and evaluation. However,

the teaching of knowledge, skills and attitudes forms the pedagogical framework for most health professional education programs. Based on the evidence reported in this dissertation, design considerations for developing and implementing educational interventions that teach about historical and ongoing colonialism of Indigenous Peoples, alongside the causal links to their health and social outcomes, are discussed. The following section outlines a proposed path forward calling for complex and emergent future research to explore design considerations and the role of ideological factors and affective reactions in moderating or mediating the impacts on causal beliefs and attitudes towards Indigenous Peoples.

6.3. Path Forward

6.3.1. Educational Intervention Design Considerations

While educational interventions are called for by the TRC and subsequently mandated by healthcare professional regulatory bodies (Association of Faculties of Medicine of Canada, 2019; Canadian Association of Schools of Nursing, 2020; TRC, 2015) to include content on Indigenous Peoples, there is a lack of standardization and evidence-based practices to inform the development and evaluation of such interventions. The complexity of teaching about the structural determinants of health and challenges with changing peoples' causal beliefs and blaming attitudes towards Indigenous Peoples is often overlooked. There is a risk of oversimplifying difficult knowledge, with scholars in the area warning against creating simplified binary approaches ('us' vs. 'them'; Ahuriri-Driscoll, 2019; Pedersen et al., 2005) that could result in views that perpetuate inequities (Sharma et al., 2018). For instance, focusing on Indigenous cultures (and identifying them as 'other') as the cause of health and social differences could lead to blaming Indigenous Peoples for their poor health and social outcomes (Ahuriri-Driscoll, 2019). Ecker and colleagues (2014) reported that people use race-related information to justify false beliefs when it was consistent with

their attitudes towards outgroups. This finding is consistent with other research that explores group membership and false beliefs towards Indigenous Peoples in Australia (Haslam & Wilson, 2000; Pedersen & Barlow, 2008). To avoid contributing to and perpetuating processes, practices and systems of oppression, non-Indigenous people must be aware of and understand the causal link between colonialism and the way systems continue to oppress Indigenous Peoples and influence their health and social outcomes (Downing & Kowal, 2011). As such, this requires further exploration of how non-Indigenous peoples engage with difficult knowledge on the structural determinants of Indigenous Peoples' health, particularly the distal determinants of health (e.g., historical and ongoing trauma).

Difficult knowledge

'Difficult knowledge' is a phrase coined by Deborah Britzman (1998; 2000) to denote the affective and epistemological challenges in teaching about and learning from social and historical trauma. Britzman (1998) based this concept on her analysis of how *The Diary of Anne Frank* was presented as part of Holocaust education. Likewise, research in settler countries has demonstrated intergenerational effects of the "American Indian Holocaust" (Brave Heart, 1999) and the Indian Residential School system in Canada (Bombay et al., 2014). Difficult knowledge is not only difficult due to its traumatic content, but also because of the affective response to such knowledge by learners because it has implications for their own social identities and positionality in relation to Indigenous Peoples. As such, how learners engage in such content may be influenced by ideological factors such as political orientation, just-world beliefs, meritocracy, social dominance orientation, and system justification.

Ideological factors were not explored in the studies included in the scoping review (Chapter 5). Although we asked learners about their political views in the course-based inquiry (Chapter 4),

political views were not found to be a predictor variable of blaming attitudes or support towards social action or policies to address inequities. It is worth noting that the majority of learners indicated left-leaning political views within our sample, and that this restricted range of views may be the reason why the survey results did not deem them to be a predictor of blaming attitudes. In future evaluations, it would be best to consider more diverse ideological factors such as right-wing conservativism, as they could provide a more accurate understanding of learners' political ideologies than political party endorsement.

Not surprisingly, our study revealed that those who expressed blaming attitudes at the end of the course were less likely to support government action to address inequities. This is consistent with research demonstrating that negative social attitudes towards Indigenous Peoples are positively correlated with social dominance orientation (Feather & McKee, 2008), and that support for government action was negatively correlated with blaming attitudes (Barlow et al., 2010; Leach et al., 2007). Yet, we know little about the way ideological factors are activated within courses on historical and ongoing colonialism, or about the causal link to Indigenous Peoples' present-day health and social outcomes. As such, research should explore developing measures of relevant ideological belief structures that continue to oppress Indigenous Peoples and privileged settlers in Canada.

Despite recognizing that Indigenous-specific educational interventions as sensitive given the focus on racism, privilege, and historical and ongoing colonial trauma, learners' emotional reactions have rarely been investigated (Mills et al., 2022; Thackrah & Thompson, 2013; Thackrah & Thompson, 2018; Shah & Reeves, 2015). There are no studies (of which this author is aware) that focus on the affective role in mediating or moderating change in deep-seated causal beliefs, attitudes and behaviours following exposure to Indigenous health curriculum. It could be

hypothesized that both the strong positive and negative emotions that occur during the process of critical reflexivity can aid or hinder the process of attitudinal change. Reflection is often used in the classroom as a method or tool that facilitates non-Indigenous people's ability to examine their beliefs and attitudes about Indigenous Peoples. This approach aligns with decolonizing pedagogy in education (Antoine et al., 2018). However, the educational interventions that included critical reflection (Alexander-Ruff & Kinion, 2019; Bernhardt et al., 2011; Jamieson et al., 2017; Mills et al., 2022; Shah & Reeves, 2015; Thackrah & Thompson, 2013) failed to provide insights into how this was done, and to what extent learners were asked to reflect on their emotional reactions. None of the studies included critical reflection positioned as a decolonizing method or tool in having non-Indigenous people examine their beliefs and attitudes. Within the included studies, a range of emotional reactions was expressed in learners' reflections such as shame, shock, disbelief, sorrow, sadness, anger, confusion, guilt and frustration in response to historical wrongdoings (Mills et al., 2022; Thackrah & Thompson, 2013). It is unclear whether learners were guided or debriefed through the reflective process to ensure they did not become overwhelmed and unable to move forward. This speaks to the complexity of selecting methods and tools within courses on Indigenous Peoples' experiences with colonialism. It also highlights the difficulty in distinguishing between the effectiveness of the various theoretical frameworks and pedagogical approaches applied within studies on the intended and unintended consequences of changing, or worse, ingraining false beliefs and negative social attitudes towards Indigenous Peoples.

What we know from survey research is that when advantaged groups (i.e., White) are portrayed as responsible for discrimination towards racial groups, group-based anger was a more appropriate explanation than group-based guilt for the willingness to support social action (Iyer & Leach, 2008). Group-based anger is the collective feeling of anger that individuals experience

when they perceive a social group is being treated unfairly (Van Zomeren et al., 2004; 2008). In contrast, group-based guilt (also known as collective guilt or white guilt) is described as an ingroup-focused emotion invoked when advantaged groups feel personally responsible for the inequities and unfair treatment of disadvantaged groups (Wohl e al., 2006). Mixed results were presented regarding whether collective guilt can motivate group members to engage or support social action (Mallett et al., 2008); some research uncovered that individuals avoid this feeling in order to maintain group boundaries that privilege the advantaged group (Reicher et al., 2006; Thomas et al., 2009). By paying attention to learners' emotions, educators and evaluators may be able to help guide learners to challenge false causal beliefs and negative social attitudes towards Indigenous Peoples more effectively through reflexive methods and tools. For some learners, these affective reactions could act to protect 'habituated ways of thinking' (Faulkner & Crowhurst, 2014, p.389), whereas others may be motivated by these uncomfortable emotional responses and develop an altered understanding, thereby leading to change within their beliefs and attitudes (Phillips et al., 2005; Dudgeon & Fielder, 2006). Therefore, educators need to help learners unpack their emotions when learning about difficult knowledge to better understand how to integrate this content into their future care practice.

Emotional reactions are often qualitatively explored through classroom observations and learners' open-ended responses (Mills et al., 2022; Thackrah & Thompson, 2013; 2018; Shah & Reeves, 2015). An emerging body of literature is exploring ethnocultural empathy in health professional programs (Fleming et al., 2015; Lewis, 2020; Monroe, 2018; Moffit et al., 2022). Ethnocultural empathy is defined as the ability to understand and relate to others from ethnic and racial cultural groups different from one's own group (Fleming et al., 2015). Most research explored ethnocultural empathy in the context of general diversity courses (Fleming et al., 2015;

Monroe, 2018; Moffit et al., 2022), while only one study explored changes in ethnocultural empathy after an Indigenous health lecture (Lewis, 2020). In the Lewis (2020) study, learner empathy scores increased significantly between pre- and post-lecture surveys. However, this change was not sustained when learners participated in a 6-month follow-up survey. Further, this research did not explore the relationship between ethnocultural empathy and learners' social justice orientation. Thus, more research is required to explore the complex relationships among learners' emotional reactions (e.g., group-based anger, guilt empathy) towards Indigenous Peoples, and how educators used decolonized methods and tools (e.g., critical reflexivity, dialogical spaces) to unpack learner reactions. Validated measures are needed to assess the complexity of health professional learners' affective reactions that are specific to Indigenous health curriculum (Mills et al., 2021). More importantly, more critical research is required prior to rigorously developing new measures that focus on the way our social and professional identity and location intersect, and how health professional students respond to learning about colonial trauma endured by Indigenous Peoples; they must be encouraged to engage in reflexivity on how this continues to benefit and privilege settlers. This can begin to inform the development of critical decolonizing pedagogies within health professional education, as the affective role in learning was, for the most part, neglected in the literature.

Little is known about the way to create positive *lasting* change in beliefs, attitudes and perceived responsibility, or even how unintended effects (namely ingrained false beliefs and negative social attitudes) are motivated. Teaching Indigenous health curriculum requires educators to be skilled in creating a classroom or learning environment that addresses the emotional and motivational dimensions associated with learning about historical and ongoing colonialism. Within the literature, there is an emphasis on creating a safe space for dialogue (Alexander & Ruff,

2018; Bernhardt et al., 2011; Herzog et al., 2021; Thackrah & Thompson, 2013). Yet, if the goal is to teach health professional learners about historical and ongoing colonial trauma, power, privilege and structural determinants of health, and if the desired outcome is to change learners' beliefs, attitudes and support to address inequities, then a safe space may be limiting based on *who feels safe within these spaces?* Perhaps we need to move the discourse toward creating a 'brave space' that encourages a pedagogy of constructive discomfort for non-Indigenous people when engaging with colonial trauma content.

6.3.1.1. Creating Space for Difficult Knowledge: Safe vs. Brave Spaces

Educational interventions in health professional programs have included discussions on historical and political aspects of colonialism, social determinants of health, racism, and privilege (Chapter 5). These discussions may afford learners the greatest opportunity to challenge unspoken deep-seated beliefs and attitudes. At the same time, educational interventions regarding Indigenous Peoples evoke emotional reactions (e.g., guilt, shame, sadness, anger; Thackrah & Thompson, 2013; Thackrah et al., 2015),competitive victimization and victim-blaming (Kickett et al., 2014), and general discomfort (Biles et al., 2016). Boler (1999) described a pedagogy of discomfort as requiring learners to engage in critical inquiry regarding their "values and cherished beliefs" (p.176). This would include learner self-examination of beliefs that influence attitudes and support for addressing inequities.

However, critical reflexivity within educational interventions to address learners' false causal beliefs has been found to elicit negative attitudes (Pedersen & Barlow, 2008). Critical reflexivity (a key component in transformative learning theory) would provide learners with an analysis of their underlying judgements regarding responsibility and beliefs about controllability, and comprehension about why group-based inequalities exist. In effect, critical reflexivity elicits

an analysis of the causal attributions for inequities and injustices and the way these are connected to social conditions (Diemer & Rapa, 2016). Diemer and colleagues (2017) postulated that critical reflection involves an understanding of the structural 'root' causes of outgroup inequalities, as well as their historical context. For instance, individuals with higher levels of critical reflexivity are more likely to recognize social, economic and political structures and systems, and are less prone to engage in victim-blaming because they are capable of making the connection between historical and contemporary forms of oppression and inequitable outcomes for outgroup members (Reis et al., 2014).

Studies referenced in Chapter 5 demonstrated that when critical reflection (a conflated term with reflexivity; refer to Ng et al., 2019 for discussion), was qualitatively assessed in learners' reflective journals (Alexander-Ruff et al., 2019; Herzog et al., 2021), there was evidence of a positive shift in learners' beliefs and attitudes towards Indigenous Peoples. However, we are unsure of the lasting changes and the effects of such a shift on behaviour. It may be because individuals do not have an awareness of ongoing colonialism as a distal determinant of health, and that they rely on intrinsic features as explanatory factors as to why Indigenous Peoples experience health and social inequities. Thus, educational interventions must make space for reflexivity on causal beliefs of historical and ongoing impacts in order to enable learners to make the connection between colonialism and present-day inequities experienced by Indigenous populations. The measurement of changes in causal beliefs surrounding Indigenous health curriculum may inform the development of new pedagogies that consider the historical and ongoing determinants of health, along with the most effective way to create space for these discussions.

6.3.1.1.1. Safe Spaces

Two metaphors used within health professional education and social justice literature are 'safe' and 'brave' spaces. Distinguishing between these two terms might provide insights into how the learning environment may influence learner outcomes based on the educator's construction of the learning space and pedagogy of the educational intervention. 'Safe space' has been used as a metaphor to refer to a personal, physical, psychological, and social space that allows learners to feel secure about engaging in an honest dialogue to explore their beliefs, attitudes, behaviours, and knowledge without feeling judged or becoming defensive (Holley & Steiner, 2005; Ryujin et al., 2016). Not surprisingly, discussions about group inequities elicit defensive responses (Sullivan et al., 2012). This said, some discomfort in learning about Indigenous Peoples can foster useful learning experiences (Dudgeon & Fielder, 2006; Ryder et al., 2019). However, DiAngelo (2018) discovered that too much discomfort for some learners could trigger defensiveness, whereby learners become closed-off to future learning possibilities. Conversely, causing no discomfort by creating spaces in which feeling defensive is completely absent could contribute to learners feeling benevolent, thus engraining their standpoints. Therefore, it is important to consider the threshold of discomfort when designing educational interventions that highlight causes of Indigenous Peoples' inequities.

It can be speculated that if there is such a thing as a safe space, then there must be an opposing 'unsafe space'. Rushing to implement Indigenous health education programs can be viewed as creating an unsafe space for both educators and learners, as there might be a lack of oversight in the design, implementation and evaluation of Indigenous health curriculum. For educators, Indigenous faculty are underrepresented and overburdened (Doira et al., 2021; Jamieson et al., 2017), and the harmful assumption that Indigenous Peoples are experts in all matters

pertaining to Indigenous Peoples (Jackson et al., 2013) creates an overreliance on Indigenous faculty. Thus, the expectations that they initiate the discussion creates an inherently unsafe space for Indigenous faculty. To alleviate this, there is a need for non-Indigenous faculty to become adequately informed and aware of the historical and ongoing colonial trauma experienced by Indigenous Peoples in order to reduce the overreliance and burden placed on Indigenous Peoples.

For learners, creating a safe space can, in turn, disrupt engagement in defensive content and engagement of critical reflexivity on their sociopolitical identity. As educational interventions often focus on preaching to people rather than having learners engage in critical reflexivity on the privileges and benefits they are afforded by settler colonialism. Pedersen and colleagues (2005) found that simply preaching to people is unlikely to be effective, and that an opportunity for dialogue is needed. Conversely, research that incorporated critical reflexivity failed to measure the relationship between reflexivity and correction of false beliefs regarding Indigenous Peoples. It also neglected to dispel myths of meritocracy or nation-building. One study that included a combination of pre-departure lectures before participating in a community service-learning experience depicted how "one student observed significant levels of tooth decay and reflected with her peers, "Why don't they just brush their teeth?" (Alexander-Ruff and Kinion, 2019, p.118). Within this study, the authors described how this learner's comment demonstrates the importance of helping students "understand the layers of social and policy issues that contribute to tooth decay such as access to care and healthy food, as well as cultural expectations" (p.118). The authors interpreted this as creating a "safe space" for the learner to share their observations based on their community service-learning experience. However, they did not assess whether the exchange resulted in any change of beliefs.

6.3.1.1.2. Brave Spaces

In the Arao and Clemens article titled *From Safe Spaces to Brave Spaces* (2013), the authors describe how safety may be confounded with comfort and advocate for reducing the emphasis on safety rather than encouraging bravery and courage when discussing difficult knowledge. Arao & Clemens (2013) described how the language of safety could "contribute to the entrenchment of dominance and subordination" by "encourag[ing] entrenchment of privilege" of those who think they do not need to make themselves vulnerable in the learning process (p.140). This observation led them to call for an alternative to safe spaces, a term they coined as 'brave spaces', which aligns with a pedagogy of discomfort (Boler, 1999) wherein learners are engaged in 'courageous conversations' (Bird & Waters, 1989; Singleton & Hays, 2008; Singleton & Linton, 2006) and encouraged to take risks in discussions on difficult knowledge.

To create a brave space to encourage dialogue, the emphasis must be placed on courage rather than the illusion of safety (Arao & Clemens, 2013). Aligning with this concept, Cindy Blackstock, a relentless Indigenous advocate for Indigenous children and youth, has been calling for non-Indigenous people to display moral courage, particularly in their support for the overhaul of the child welfare system. Within Blackstock's (2011) conceptualization of moral courage is the importance of having courageous conversation. Moral courage, in this context, entails whistle-blowing on the longstanding colonial and social trauma perpetuated by systems and individuals (Blackstock, 2011). As such, moral courage requires learners to reflect on and understand their moral values in order to participate in meaningful dialogue about causal factors (e.g., historical and ongoing colonial trauma) of Indigenous Peoples' health and social inequities and, in turn, to support actions addressing the social and structural causes that influence Indigenous populations. Within this linguistic and praxis call for brave spaces is the importance of promoting the courage

to ask questions that challenge beliefs and attitudes as to why and how inequities continue to exist, as well as why and how settlers are over-privileged. It also calls for non-Indigenous individuals to take responsibility for social action to create change (including the teaching of Indigenous content to reduce the overreliance and burden placed on Indigenous Peoples). This space is a place to explore and discuss uncomfortable emotions in relation to one's beliefs, attitudes and sociopolitical identity, together with their resistance to content in order to unpack the root causes of Indigenous Peoples' health and social inequities stemming from historical and ongoing colonialism.

The example shared earlier by Alexander-Ruff and Kinion (2019) involved creating a "safe space" that allowed a learner to share their observations (e.g., high rates of tooth decay in Indigenous communities) based on their community service-learning experience in a safe environment. The authors attributed the learner's feeling of safety to the establishment of a group norms contract, which aligns with Arao and Clemens' (2013) acknowledgement that the enactment of brave spaces requires setting ground rules. However, the learner's expression of a false belief or the endorsement of an individual attribution, "Why don't they just brush their teeth?", blamed Indigenous Peoples for their significant tooth decay rather than a structural endorsement. Although, the authors do not provide a description of the ensuing dialogue, this highlights the importance of creating space to unpack false beliefs through courageous discussions. Engaging in reflexivity and courageous dialogue between the educator and the learner regarding the structural determinants of health, particularly the distal determinants, can address such false beliefs. This can be achieved by unpacking the learner's belief by encouraging reflexivity on *why the learner believes that Indigenous Peoples do not brush their teeth contributes to tooth decay?, and what structural determinants of health may be causing or hindering Indigenous Peoples' ability to brush their teeth?* Further, having them identify the way *the distal determinants of health influence tooth*

decay? By engaging in reflexivity and dialogue, both learner and educator can begin to establish where these beliefs stem from in hopes of positively shifting the endorsement of individual attributions to structural attributions. In this example, the act of creating a brave space can best be understood as praxis, thereby iteratively linking reflection and action (e.g., dialogue) towards understanding the causes of Indigenous Peoples' health and social outcomes. In itself, such a discussion could lead learners to be reluctant to discuss causal beliefs and attitudes (Mills et al., 2022; Thackrah & Thompson, 2013; 2018; Shah & Reeves, 2015). Consequently, if these emotional reactions are not addressed, they will be detrimental to learning, as well as to the success of the educational intervention.

Although the objective of this dissertation does not include an evaluation of the effect of the learning environment on learner outcomes, the literature reviewed in Chapter 5 highlighted a reliance on creating a 'safe space' within educational interventions for learners to explore their thoughts, feelings and perspectives. Such educational interventions must consider and address the potential backfiring effect of creating spaces that are free of discomfort for learners when engaging in difficult knowledge. Indeed, within the literature mapped in Chapter 5, there were differences uncovered in the way difficult knowledge was framed. The educational interventions that used a transformative learning theory often attempted to reframe causal beliefs and attitudes by having learners engage in reflexivity on their social identity and location (Alexander-Ruff et al., 2019; Herzog et al., 2019; Jackson et al., 2013; Mills et al., 2022; Oosman et al., 2019), which resulted in a positive shift in learners' beliefs and attitudes towards Indigenous Peoples. In contrast, less effective educational interventions that were developed through a culturally-informed (e.g., safety or security) lens placed less emphasis on reflecting upon the root causes of inequities of Indigenous Peoples and focused more on what was lost by colonialism (Issacs et al 2016; Jamieson et al.,

2017; Thackrah & Thompson, 2013; 2018; Thackrah et al., 2018). Given the similarities of findings between by Tachkrah and colleague's studies (2013; 2015; 2018) and the course-based inquiry in Chapter 4, there is a need for more robust research to determine why certain theoretical frameworks, educational content, pedagogy, and approaches might be more effective than others, and could even have a backfiring effect. Given the heterogeneity of the literature, we are unable to draw conclusive statements. We can, however, begin to identify trends that may be influencing the outcomes observed within this dissertation. Given potentially diverging learner experiences, educational interventions that include content surrounding the social determinants of health and group-based inequities might strive to create a *productive tension* wherein learners grapple productively with defensive reactions and causal beliefs about Indigenous Peoples' inequities.

6.4. Future Research

While some research has measured and demonstrated improved outcomes among learners who participated in Indigenous-specific educational interventions, I argue that existing evaluation studies lack the complexity required to understand the nuances of difficult knowledge and critical reflexivity on changing deep-seated beliefs and negative social attitudes towards Indigenous Peoples. This dissertation contributes to a better understanding of the relationships between beliefs about causes of health and social inequities (e.g., individual vs. social/structural determinants). It also addresses the way these influence non-Indigenous peoples' blaming attitudes, and their perceived responsibility for addressing Indigenous Peoples' health and social inequities. For educators, this might help to identify attitudinal and ideological foci that are amenable to change by identifying how, why, and when educational interventions work. There is an urgent need for the development of robust and critical evaluations that explore changes in health professional

learners' beliefs, attitudes and behaviours so as to determine effective content, approaches, theoretical frameworks, and pedagogy.

While advancing traditional program evaluation strategies using a knowledge, skills and attitudes framework is a great start (Kirkpatrick, 1998), a purely outcome-driven evaluation may be too narrow to understand the complexity of what is involved to effectively teach an understanding of historical and ongoing colonialism and the effects on Indigenous Peoples' health and social outcomes. Evaluations of these interventions may require broadening existing frameworks to consider the varying and synergistic factors that influence such outcomes. In the present dissertation, attribution theory was used as a conceptual framework because it provides a way to understand how learning about the impacts of historical and ongoing colonialism on health and social outcomes for Indigenous Peoples might influence learner outcomes. Theory-based evaluations enable a particular understanding of why a program is resulting in intended and unintended consequences by understanding relevant mechanisms that mediate between the program processes and outcomes (Weiss, 1997). However, other frameworks might be helpful, and could shape evaluations to consider other meaningful environmental, social, personal, cultural, emotional and cognitive factors that facilitate or present barriers to change.

Although theoretically driven, the methodology of the work of this dissertation was limited to assessing particular outcomes that reflected simple relationships derived from this framework. In contrast, there are merits to considering using a realist evaluation approach that acknowledges and accommodates the "messiness of real-world interventions" (n.p., Wong et al., 2011). A realist evaluation approach combines planned (i.e., Why will the program bring about the intended effects?) and emergent theories (i.e., Are there other explanations for the intended and unintended effects?) and may uncover a fuller understanding as to why educational interventions to date have

demonstrated mixed outcomes. Realist evaluations of educational interventions entail an "iterative explanation-building process", as they allow us to explore the link between context, mechanisms and outcomes by better illustrating when interventions tend to work, for what types of learners, in what contexts, and with what outcomes (Wong et al., 2011). This would include how learners engaged in critical reflexivity grapple with difficult knowledge.

There seems to be a consensus that no single method of evaluation is sufficient (van der Vleuten et al., 2010) for evaluating and assessing educational interventions that teach about Indigenous Peoples and colonialism. By using a realist evaluation model, we can begin to develop a theory of change to inform future educational interventions, as well as policy and program development. The hope would be to inform the development of a tailored pedagogical intervention in health professional education programs that convey difficult knowledge as it relates to Indigenous Peoples' social and historical trauma in Canada. Evaluation strategies should consider that desired outcomes would take time, and as such, longitudinal follow-up, along with both quantitative and qualitative methods, should be considered in the evaluation design.

Moving forward, developing a realist evaluation method would capture planned and emergent outcomes of such interventions, and enabled continued monitoring of intended and unintended consequences. As such, future research should integrate various educational, social, political, and psychological theories (such as attribution theory), which would provide an increased comprehension as to why educational interventions have demonstrated particular outcomes, under what conditions, and for which learners. This would also allow us to develop a more accurate understanding of non-Indigenous peoples' causal beliefs, the ways in which they attribute responsibility for ongoing inequities (e.g., individual vs. social/structural determinants), and how they influence intergroup attitudes and actions. To advance the work in Chapter 4, research should

explore the mediating and moderating roles of affective reactions and social identities, as well as the intersection of these factors on learning outcomes. This could help to identify the features and processes that should be considered in the design of educational interventions on Indigenous Peoples and colonialism.

6.5. Limitations and aps

In addition to the limitations presented in Chapter 3 and within each manuscript (Chapter 4 and 5), there remains two main gaps to be filled based on the evidence presented in this dissertation. A major limitation of the empirical research associated with educational interventions relates to the lack of definitions or theoretical frameworks, and the tendency to use indirect or vague language in describing course objectives, design considerations and outcomes. The reliance on vague terminology is problematic since it lends confusion to the empirical literature that seeks to assess the success of educational interventions to address inequities. As such, this poses a limitation to the analyses conducted in this dissertation, as authors were not contacted for additional information such as theoretical framework. It could be because course activities were informed by a framework, but not described. Future research could aim to contact authors of included educational interventions for additional information on curricula and theoretical frameworks. There is a need to assess the mediating and moderating effects of affective reactions and learners' worldviews (e.g., just-world beliefs, social dominance orientation, political ideology) to identify effective strategies for correcting false beliefs, blaming attitudes and support for action to address inequities. Research in this field is still in its infancy and would benefit from exploring how educational interventions are positioned pedagogically in terms of Indigenization vs. decolonization, and the role of affective learning. It would also be useful to explore the varying effects of the design and delivery of courses that address Indigenous Peoples and colonialism to

identify the best teaching methods to address difficult knowledge. This includes ascertaining various course design considerations including theoretical frameworks, course content and delivery, and approaches.

Using a realist evaluation approach with advanced statistical techniques that capture the interplay among many variables over time (e.g., cross lagged panels, structural equation modeling), along with qualitative methods, will allow researchers and educators to develop a more sophisticated understanding. Potential factors to explore in terms of evaluating educational interventions are the learning context, mechanisms and outcomes (e.g., changes in causal beliefs and attitudes) and learners' characteristics (e.g., sociopolitical ideologies) to identify why educational interventions work, which ones don't work, under what learning conditions, and for which learners.

6.5.1. Implications for Program Development and Evaluation

The findings of this dissertation may be of interest to educators, curriculum designers and policy and program developers who are implementing changes based on the TRC's Calls to Action within health professional programs and beyond. Based on the findings of the present dissertation, we offer some suggestions on ways to critically advance the work of this dissertation and facilitate course evaluations:

1. Encourage educators to explicitly define constructs and identify design consideration within their course development to disentangle and grapple with the nuances within the empirical literature on learner outcomes;
2. Design, develop and implement realist evaluations to advance the health professional educational literature on courses that teach about Indigenous Peoples and colonialism;

3. Advance course evaluations from outcome-based evaluations, particularly knowledge-based, to understand and identify how, why, and when educational interventions work. This requires exploring the effect of the varying course design features (e.g., theoretical framework, learning environment, content, pedagogy, approaches) and the mediating and moderating effects of emotional and cognitive factors that facilitate or present barriers to change;
4. Employ long-term follow-ups to assess the lasting intended and unintended effects of educational interventions on learners' causal beliefs, attitudes and behaviours;
5. Develop and validate measures specific to the needs and experiences of Indigenous Peoples' health and social inequities in Canada, as there is currently a lack of standardized measures that have been validated in relation to Indigenous Peoples; and,
6. Incorporate what was learned from evaluations of educational interventions being implemented in other disciplines and contexts to determine environmental, social, personal, cultural, emotional, and cognitive factors that facilitate or present barriers to change.

6.6. Conclusion

This dissertation helped to address a gap in the current literature on the implementation and evaluation of Indigenous curriculum in health professional programs by:

1. Evaluating the effect of Indigenous health curriculum on health professional learners' causal beliefs, attitudes, sense of responsibility, and support for government action to address inequities for Indigenous Peoples in Canada (Manuscript 1); and,
2. Mapping and analyzing of the current research landscape of educational interventions on the historical and ongoing effects of colonization in Canada and countries that share similar

colonial histories (i.e., the United States, Australia and New Zealand) was completed. Within the scoping review, the common evaluation methods used, as well as the short -and long-term outcomes of Indigenous health curricula on health professional learners' beliefs, attitudes and perceived responsibility to address inequities were extracted and analyzed (Manuscript 2).

Taken together, the findings from each manuscript unearthed considerable ambiguity and complexity in the development and evaluation of educational interventions that teach about Indigenous Peoples and colonialism. Part of this complexity arises from the heterogeneity of conceptual models guiding course development (e.g., cultural safety vs. transformative learning theory), the diversity and framing of colonialism and inclusion of other course content, the learning environment, and a lack of consideration of learner characteristics (e.g., social identity, affective reactions) that might influence reactions to content. As such, despite the recommendations by health professional schools, governing license bodies, and the TRC's Calls to action on implementing educational interventions on historical and ongoing colonialism, the question remains: What are the consequences of these interventions (both intended and unintended), and for whom and under what conditions do these interventions work?

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Appendix A: Course Evaluation Questionnaire

Pre-course Survey

For us to be able to connect your responses on the anonymous pre-course and post-course surveys, we ask you to create a USERID. This includes your initials, and the last digit of your birth month, date, and year (e.g., AM298, Name - Angela MacDougal Birthday – February 9, 1998).

USERID: _____

Post-course Survey

For us to be able to connect your responses on the anonymous pre-course and post-course surveys, we asked you to create a USERID at the beginning of the last survey. This includes your initials, and the last digit of your birth month, date, and year (e.g., AM298, Name - Angela MacDougal Birthday – February 9th, 1998).

USERID: _____

Demographic information

1. Gender and gender-expression exists on a spectrum. To be as inclusive as possible, we have left an open space to identify your own gender. Some examples of gender include, but are not limited to, female, male, trans*, two-spirit, and agender.
   Gender: _____
2. Age: _____
3. Cultural Identity: Your cultural identity is your self-defined sense of belonging to a group – which could include race, ethnicity, nationality, religion, province, locality – or any social group that has its own distinct culture.

   Please list/describe which ethno-racial-cultural group(s) you identify with and/or that you consider to be part of your cultural identity. List as many as apply. Examples include Scottish, Mi'kmaq, Italian, African Nova Scotian, Lebanese, Inuit, Irish, Acadian, Jewish,

English, Canadian, Quebecois, Chinese-Canadian, Colombian, Newfoundlander, German, etc.

Specify:

_____

4. Does your cultural identity include any of the three Indigenous groups in Canada? And/or identification with a specific Indigenous community?
    - No, I do not have any Indigenous heritage (i.e., First Nations, Metis, Inuit)
    - First Nations
    - Métis
    - Inuit

    Please feel free to elaborate on your answer:

    _____

    _____

    _____

    _____

5. Not surprisingly, one's political views are often associated with their views on various social issues. What political group do you support?
    - NDP
    - Green Party
    - Conservative
    - Liberal
    - None

Causal Beliefs about Indigenous Peoples Inequities (R = reverse scoring)

Items	**Strongly Disagree**	**2**	**3**	**Neutral**	**5**	**6**	**Strongly Agree**	**Do not know**
Numerous policies put into place through the Indian Act over generations have contributed to the present-day health disparities affecting Indigenous peoples.								
The negative health effects of colonization on Indigenous Peoples have been exaggerated and have received too much emphasis in our society and/or media.								
Because Indian Residential Schools were in the distant past, they probably don't play a huge role in the health/social gaps that exist today between Indigenous and non-Indigenous Canadians. (R)								
The long-term effects of the Residential School system have been over-exaggerated in the media and/or society in general. (R)								
The negative health effects of the Residential School system have been transferred from one generation to the next and contribute to present-day health inequities facing Indigenous peoples.								

It seems unlikely that the Residential School system has negatively affected the well-being of the children and grandchildren of those who attended these schools. (R)								
Indigenous peoples in some contexts do not receive equitable health services which contribute to ongoing health disparities.								
Indigenous People in Canada have equal or more access to government-provided healthcare. (R)								
Certain ongoing government policies related to the provision of social services contribute to the ongoing health inequities facing the Indigenous peoples in Canada.								
Indigenous Peoples in Canada receive the same or more funding for greater access to social and health services. (R)								
There is no relationship between the social determinants of health (e.g., housing, income, education) and the historical and ongoing health and social gaps between Indigenous and non-Indigenous peoples. (R)								
Differences between Indigenous and non-Indigenous peoples in key social determinants of health such as								

income and education play a significant role in contributing to health and social inequities between these groups.								

Modified Items Assessing Blaming Attitudes towards Indigenous Peoples

Items	**Strongly Disagree**	**2**	**3**	**Neutral**	**5**	**6**	**Strongly Agree**	**Do not know**
Most of the health and social problems of Indigenous people are brought on by themselves.								
The root causes contributing to the health and social inequities facing Indigenous peoples today have been out of their control. (R)								
Indigenous Peoples in Canada face unique historical, cultural, and social determinants of health associated with colonization that has affected their well-being. (R)								
Many Indigenous peoples face unique obstacles that influence their opportunities to be successful and prosperous. (R)								
Unfair and discriminatory social structures and institutions continue to promote "White" and "Settler" privilege at the expense of Indigenous peoples. (R)								

Many other ethno-racial groups overcame racism and worked their way up so Indigenous peoples should be able to do the same.								
If Indigenous people worked harder, they could have an equal chance to be successful and well-off.								
Everyone has equal opportunity, so this so-called "White" and/or "Settler" privilege is really an excuse for the health inequities facing Indigenous peoples**.**								

Support for Government Responsibility and Policies and Actions to Reduce Inequalities

Items	**Strongly Disagree**	**2**	**3**	**Neutral**	**5**	**6**	**Strongly Agree**
The federal government is spending too much on improving the living conditions of Indigenous Peoples. (R)							
The federal government is not putting enough funding towards improving the health and well-being of Indigenous Peoples.							
Social policies for Indigenous Peoples, such as affirmative action, should not be instituted because they discriminate unfairly against others. (R)							
Programs such as affirmative action should be instituted in medical schools and other contexts to help create equity for Indigenous Peoples.							
Indigenous Peoples should be treated like all Canadians and should not have any special benefits or rights to land or to hunt/fish. (R)							
It is not the responsibility of our governments to provide special attention to reducing the health and social inequities facing Indigenous Peoples. (R)							

The inherent rights of Indigenous Peoples in Canada should be upheld by our governments and our country.							
All levels of government have an obligation to work with Indigenous Peoples to reduce health and social inequities.							
It is the responsibility of all levels of governments to support the improvement of Indigenous Peoples' health and social conditions.							

Perceived Responsibility as a Future Healthcare Provider

Items	**Strongly Disagree**	**2**	**3**	**Neutral**	**5**	**6**	**Strongly Agree**
Please indicate the degree to which you agree or disagree with the following statements about what you consider to be your responsibility as a **healthcare provider:**							
I have a social responsibility to work with Indigenous Peoples to improve their social and health conditions.							
It is important for me to advocate with Indigenous Peoples for the improvement of their health and well-being.							
I do not have a social responsibility to consider the unique factors that might influence the experiences of Indigenous patients seeking healthcare. (R)							
My mandate as a health professional does not include attention to the unique factors that may affect Indigenous Peoples, but is instead focused on providing equal care to all patients. (R)							

Appendix B: Development of the Causal Beliefs about Indigenous Peoples Inequities Measure

2019 Survey Items	2020 Survey Items	2022 Survey Items
The negative health effects of the Residential School system have been transferred from one generation to the next and contribute to present-day health/social gaps facing Indigenous peoples.	The negative effects of the Indian Residential School system are a significant contributor to the health and social gaps that exist between Indigenous and non-Indigenous peoples today.	The negative effects of the Indian Residential School system are a significant contributor to the health and social gaps that exist between Indigenous and non-Indigenous peoples today.
It seems unlikely that the Residential School system has negatively affected the well-being of the children and grandchildren of those who attended these schools and is still a significant cause of health/social gaps relative to the non-Indigenous population. (R)	It is unlikely that the Indian Residential School system has negatively affected the well-being of the children and grandchildren of those who attended and doesn't play a significant role in the well-being of Indigenous peoples today. (R)	It seems unlikely that the Indian Residential School system has negatively affected the well-being of the children and grandchildren of those who attended. (R)

	Because Indian Residential Schools were in the distant past, they probably don't play a huge role in the health/social gaps that exist today between Indigenous and non-Indigenous Canadians. (R)	Because Indian Residential Schools were in the distant past, they probably don't play a huge role in the health/social gaps that exist today between Indigenous and non-Indigenous Canadians. (R)
	The negative effects of the Indian Residential School system have been transferred from one generation to the next and contribute to ongoing gaps in health/social outcomes between Indigenous and non-Indigenous peoples.	The negative effects of the Residential School system have been transferred from one generation to the next and contribute to present-day health inequities facing Indigenous Peoples.
The numerous harmful aspects of colonization that occurred before and after the Indian Residential School system over generations continues to contribute to health and social gaps	Numerous aspects of colonization that occurred before, during and after the Indian Residential School system (e.g., Indian Act, forced relocations, Sixties Scoop) have had negative	Numerous policies put into place through the Indian Act over generations have contributed to present-day health disparities affecting Indigenous Peoples.

between Indigenous and non-Indigenous peoples today.	intergenerational effects and contribute to gaps in health/social outcomes.	
The long-term effects of the Residential School system have been over-exaggerated in the media and/or society in general. (R)	The long-term effects of the Residential School system have been over-exaggerated in the media and/or society in general. (R)	The long-term effects of the Residential School system have been over-exaggerated in the media. (R)
Indigenous peoples in some contexts do not receive equitable health services which contributes to ongoing health/social gaps.	Indigenous peoples in some contexts have reduced access to certain health/social services relative to non-Indigenous Canadians, which contributes to ongoing health/social gaps.	Indigenous Peoples in some contexts do not receive equitable health services which contribute to ongoing health disparities.
The Indigenous population in Canada have equal access to government provided healthcare.	Indigenous peoples in Canada have equal or more access to government provided healthcare and social services compared to non-Indigenous Canadians. **(R)**	Indigenous peoples in Canada have equal or more access to government provided healthcare. **(R)**

Government policies related to the provision of social services contribute to the ongoing health inequities facing the Indigenous Peoples in Canada.	Certain ongoing government policies related to the provision of social/health services for Indigenous peoples contributes to the ongoing health/social gaps between Indigenous and non-Indigenous peoples.	Certain ongoing government policies related to the provision of social services contribute to the ongoing health inequities facing Indigenous Peoples in Canada.
Indigenous Peoples in Canada receive the same amount or more funding for social and health services relative to non-Indigenous Canadians. (R)	Indigenous Peoples in Canada receive the same amount or more funding for social and health services relative to non-Indigenous Canadians. (R)	Indigenous Peoples in Canada receive the same amount or more funding for greater access to social and health services. (R)
	Differences between Indigenous and non-Indigenous peoples in key social determinants of health such as income and education play a significant role in contributing to health and social inequities between these groups.	Differences between Indigenous and non-Indigenous peoples in key social determinants of health such as income and education play a significant role in contributing to health and social inequities between these groups.

	There is no relationship between the social determinants of health and the historical and ongoing health and social gaps between Indigenous and non-Indigenous peoples. **(R)**	There is no relationship between the social determinants of health (e.g., housing, income, education,) the historical and ongoing health and social gaps between Indigenous and non-Indigenous peoples. **(R)**

Appendix C: Search Strategy

CINAHL via EBSCO

Search terms: (aboriginal* or "american indian*" or Amerind* or autochtone* or "first nation*" or indigenous* or indigenist* or inuit* or Eskimo* or Inupiat* or "alaska native" or "Native Alaskian" or "Alaska's Indigenous people" or metis or "native american*" or "native canadian*" or "native people*" or algonquin or aleut* or anishinabek or anishnabek or chipewyan or cree or dene or eskimo* or gitksan or haudenosaunee or huron or innu or inuktitut or inuk or inupiat* or iqaluit or iroquois or kalaallit* or kawawachikamach or kahnawake or kitikmeot or kitimat or kivalliq or kwakiutl or manitoulin or metis or miawpukek or micmac or mi'kmaki or mi'kmaq or mi'kmaw or mohawk or mushkegowuk or naskapi or nisga'a or nakada or nakata or oji- cree or ojibway or oki or opaskwayak or pauktuutit or qikiqtani or qayuqtuvik or "rankin inlet" or sekhon or sioux or tungasugit or tuttarvingat or "vuntut gwitchin akwesasne" or arctic or athabasca or "canadian arctic" or "chesterfield inlet" or "deline, northwest territories" or "eeyou istchee" or inukjuak or igluligaarjuk or inuvialuit or ivujivik or "james bay" or kuujjuaq or "mackenzie river basin" or mistissini or nain or nemaska or "newfoundland and labrador" or "northern alberta" or "northern british columbia" or "northern canada" or "northern manitoba" or "northwestern ontario" or "northern quebec" or nunatsiavut or nunavut or nunavik or nutaqqavut or "ouje-bougoumou" or shubenacadie or "slave lake" or subarctic or "subarctic ontario" or "wikwemikong native hawaiian" or Hawaii or "ni'ihau" or niihau or "kaua'i" or kauai or "o'ahu" or oahu or "moloka'i" or molokai or "lana'i" or lanai or "kaho'olawe" or kahoolawe or maui or maori or aborginee)
("practice educ*" or fieldwork or "field work" or "clinical placement*" or "clinical education" or "student placement*" or "student supervis*" or "work based learn*" or "work integrated learning" or "WIL" or practicum or preceptorship* or "clinical clerkship*" or "placement environment*" or

"clinical learning environment*" or ((clinic* or "health profession*") N3 (practice or school or college* or universit* or institut*)) or ("practice educ*" or fieldwork or "field work" or "clinical placement*" or "clinical education" or "student placement*" or "student supervis*" or "work based learn*" or "work integrated learning" or "WIL" or practicum or preceptorship* or "clinical clerkship*" or "placement environment*" or "clinical learning environment*")

("social work*" or "physical therap*" or "allied health profession*" or dentist* or nurs* or physician or medicine or medic* or dietetics or "medical technolog*" or podiatry or psychologist* or "speech-language patholog*" or "play therap*" or audiolog* or radio* or perfusionist* or "medical physic*" or orthoptics or nutritionist* or physiotherap* or "physicial therap*" or "occupational therap*" or dietetic* or "speech patholo*" or "medical scientist" or "allied health" or counsel* or counselling)

((Stereotype* or predjudic* or racis* or colonial* or stigma or Cultural* or "cultural safe*" or "cultural competen*" or "cultural humility" or contact or discrimination or inequit* or race or "social determinants of health" or "social determinant*" or "structural determinants of health" or "structural determinant*" or trauma*) N3 (anti or reduc* or educat* or intervention or training or attitude* or beliefs or behaviour* or behavior* or knowledge))

MeSH terms: ("Indigenous Peoples+") OR ("Aboriginal Canadians+") OR ("Indigenous Health") OR ("First Nations of Australia+") OR ("Health Education+") OR ("Student Health Education") OR ("Education, Health Sciences+") OR ("Allied Health Personnel+") OR ("Students, Allied Health+") OR ("Allied Health Professions+") OR "Cultural Competence") OR ("Cultural Diversity") OR ("Cultural Safety") or ("Racism") OR ("Cultural Bias") OR ("Stereotyping") OR ("Stigma") OR ("Social Determinants of Health") OR ("Social Worker Attitudes") OR ("Social Responsibility") OR ("Social Behavior")

MEDLINE via OVID

Search terms: Same as CINAHL search terms

MeSH terms: American native continental ancestry group or Indians, north American or American natives or oceanic ancestry group or Education or Professional or Health Personnel or attitude of health personnel culture or acculturation or cross-cultural comparison or cultural characteristics or cultural competency or cultural deprivation or cultural diversity or psychosocial deprivation or prejudice/ or racism or health status disparities or "social determinants of health" or "stereotyping"

PsycINFO via EBSCO

Search terms: Same as CINAHL search terms

MeSH terms: ((DE "Indigenous Populations" OR DE "Alaska Natives" OR DE "American Indians" OR DE "Inuit" OR DE "Pacific Islanders") AND (DE "Allied Health Personnel" OR DE "Home Care Personnel" OR DE "Occupational Therapists" OR DE "Physical Therapists" OR DE "Psychiatric Aides" OR DE "Speech Therapists") OR (DE "Health Personnel" OR DE "Allied Health Personnel" OR DE "Caregivers" OR DE "Medical Personnel" OR DE "Mental Health Personnel") AND (DE "Curriculum Development") AND (DE "Cultural Diversity" OR DE "Cultural Identity" OR DE "Cultural Sensitivity" OR DE "Cultural Competence" OR DE "Cultural Diversity" OR DE "Cultural Identity" OR DE "Cultural Sensitivity" OR DE "Race and Ethnic Discrimination" OR DE "Social Discrimination" OR DE "Racial Disparities" OR DE "Affirmative Action" OR DE "Implicit Bias" OR DE "Prejudice" OR DE "Racial and Ethnic Attitudes" OR DE "Antiracism" OR DE "AntiSemitism" OR DE "Ethnocentrism" OR DE "Racism" OR DE "Social Dominance" OR DE "Social Equality" OR DE "Social Equity" OR DE "Social Learning" OR DE "Social Responsibility" OR DE "Stereotyped Attitudes" OR DE "Stereotyped Behavior"))

ERIC, Sociological Abstracts, and ProQuest Dissertations and Theses via ProQuest

NOFT(aboriginal* OR "american indian*" OR Amerind* OR autochtone* OR "first nation*" OR indigenous* OR indigenist* OR inuit* OR Eskimo* OR Inupiat* OR "alaska native" OR "Native Alaskian" OR "Alaska's Indigenous people" OR metis OR "native american*" OR "native canadian*" OR "native people*" OR algonquin OR aleut* OR anishinabek OR anishnabek OR chipewyan OR cree OR dene OR eskimo* OR gitksan OR haudenosaunee OR huron OR innu OR inuktitut OR inuk OR inupiat* OR iqaluit OR iroquois OR kalaallit* OR kawawachikamach OR kahnawake OR kitikmeot OR kitimat OR kivalliq OR kwakiutl OR manitoulin OR metis OR miawpukek OR micmac OR mi'kmaki OR mi'kmaq OR mi'kmaw OR mohawk OR mushkegowuk OR naskapi OR nisga'a OR nakada OR nakata OR oji- cree OR ojibway OR oki OR opaskwayak OR pauktuutit OR qikiqtani OR qayuqtuvik OR "rankin inlet" OR sekhon OR sioux OR tungasugit OR tuttarvingat OR "vuntut gwitchin akwesasne" OR arctic OR athabasca OR "canadian arctic" OR "chesterfield inlet" OR "deline, northwest territories" OR "eeyou istchee" OR inukjuak OR igluligaarjuk OR inuvialuit OR ivujivik OR "james bay" OR kuujjuaq OR "mackenzie river basin" OR mistissini OR nain OR nemaska OR "newfoundland and labrador" OR "northern alberta" OR "northern british columbia" OR "northern canada" OR "northern manitoba" OR "northwestern ontario" OR "northern quebec" OR nunatsiavut OR nunavut OR nunavik OR nutaqqavut OR "ouje-bougoumou" OR shubenacadie OR "slave lake" OR subarctic OR "subarctic ontario" OR "wikwemikong native hawaiian" OR Hawaii OR "ni'ihau" OR niihau OR "kaua'i" OR kauai OR "o'ahu" OR oahu OR "moloka'i" OR molokai OR "lana'i" OR lanai OR "kaho'olawe" OR kahoolawe OR maui OR maori OR aborginee) AND (NOFT((clinic* or "health profession" OR "health professional" OR "health professionals" OR "health professions") NEAR/3 (practice or school or college* or universit* or institut*)) OR NOFT("practice education" or fieldwork or "field

work" or "clinical placement" or "clinical education" or "student placement" OR "student placements" or "student supervis*" or "work based learn*" or "work integrated learning" or "WIL" or practicum or preceptorship* or "clinical clerkship" OR "clinical clerkships" or "placement environment*" or "clinical learning environment*")) AND NOFT("social work" OR "social worker" OR "social workers" OR "social works" or "physical therapies" OR "physical therapist" OR "physical therapists" OR "physical therapy" or "allied health profession*" or dentist* or nurs* or physician or medicine or medic* or dietetics or "medical technologies" OR "medical technologist" OR "medical technologists" OR "medical technology" or podiatry or psychologist* or "speech-language patholog*" or "play therapy" or audiolog* or radiolog* or perfusionist* or "medical physical" OR "medical physician" OR "medical physicians" OR "medical physicist" OR "medical physicists" OR "medical physics" or orthoptics or nutritionist* or physiotherap* or "physicial therap*" or "occupational therapies" OR "occupational therapist" OR "occupational therapists" OR "occupational therapy" or dietetic* or "speech pathologist" OR "speech pathologists" OR "speech pathology" or "medical scientist" or "allied health" or counsel* or counselling) AND NOFT((Stereotype* or predjudic* or racis* or colonial* or stigma or Cultural* or "cultural safe*" or "cultural competen*" or "cultural humility" or contact or discrimination or inequit* or race or "social determinants of health" or "social determinant*" or "structural determinants of health" or "structural determinant*" or trauma*) NEAR/3 (anti or reduc* or educat* or intervention or training or attitude* or beliefs or behaviour* or behavior* or knowledge))

Appendix D: Data Extraction Tool

The following is an example of the data extraction tool used in Chapter 5.

Article citation	**Type of study**	**Study setting (e.g., Country, healthcare, social setting)**	**Health Professional Training Program**	**Indigenous identity group (e.g., more than one Indigenous group or about a specific group)**	**Type and number of study participants**	**Discussion of decolonizing methods (e.g., teaching, evaluation) and positionality of the team**	**Educational intervention** Course objective; Course content/activities; Educational intervention length; course theoretical framework; Strength-based vs. deficit-based	**Evaluation plan:** Evaluation framework; Methods/main outcomes measured; Results
Information for the 14 included studies								