Engaging Indigenous Youth in Community-Based Participatory Action Research:
A Scoping Review

by

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DEDICATION

At the completion of this degree, I have come to believe that we have no idea what our future holds. At age 12, I had planned on becoming an author or an actor, but instead, I pursued a career in the medical sciences field. While working on my Medical Sciences Degree, I was committed to transitioning directly into medical school. Instead, I found myself launching head-first into the field of participatory research with Indigenous communities in Canada.

I dedicate this thesis to all my teachers. Thank you for helping me find joy in learning, both inside and outside the classroom. My earliest teachers, Mom and Dad, created endless teachable moments on the ocean, at the garden, in the forest, and practically everywhere else I can remember… Thank you for showing me that there are many kinds of knowledge. There were a few teachers in high school who stand out as mentors who emboldened my commitment to learning -- Debbie MacLean, John MacLean, Gareth Luke, Lorraine Cantwell, Victoria Best, Rosemarie Perry -- please keep teaching young people. You made a real difference in my learning. Some of you encouraged me to honour my strengths, and to always strive to improve, while others explained that I can't be good at everything, and that's okay. You have all impressed upon me that, while knowledge is a wonderful gift, it is more important to be kind, and to be humble about how much we still have to learn.

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ABSTRACT

Community-based participatory action research (CBPAR) frameworks are becoming a leading strategy for conducting research with Indigenous communities and youth. Core features of CBPAR include respectful relationships with community members that establish a framework for authentic community leadership in research processes, including the development of research objectives and questions, the approaches and methods used, data analyses, and knowledge translation and action. Despite the promise of CBPAR approaches to increase community voice in research, in reality, various factors may influence the extent to which participants are engaged as decision-makers in research processes. This scoping review identified studies in the peer-reviewed academic literature in which Indigenous youth in both Canada and the US were involved as decision-makers in CBPAR projects. Findings suggest that CBPAR employs diverse strategies to engage youth as decision-makers and that youth may experience distinct positive outcomes associated with their participation in directing research processes.

LIST OF ABBREVIATIONS

- CBPAR: Community-based participatory action research

- KT/A: Knowledge translation and/or action

- US: United States of America

- YRP: Youth research partner

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CHAPTER 1   INTRODUCTION

This scoping review identifies studies in Canada and the United States (US) that have engaged Indigenous youth as decision-makers in community-based participatory research (CBPAR). The purpose of this review was to determine how, and to what extent, Indigenous youth are included in making decisions throughout participatory research processes, and how youth are affected by their participation. We summarize key strategies that are used to engage youth in CBPAR, as well as how various strategies promote positive experiences and outcomes for youth research partners (YRPs). For the purpose of this review, YRPs include all youth engaged in CBPAR who exert some level of decision-making power throughout the research process (i.e., any form of youth inclusion eligible for review in this study - see Section 3.3.1 for eligibility criteria).

CBPAR is becoming an increasingly popular approach to research with Indigenous communities in Canada and the US (Israel, Eng, Schulz & Parker, 2012; Laveaux & Christopher, 2009; Rasmus, 2014). Core tenets of CBPAR align with Indigenous values and interests, particularly by responding to a fraught history of research with Indigenous communities (Laveaux & Christopher, 2009). Throughout history, there have been many examples of research implicating Indigenous peoples that has either served them no benefit, or has imparted significant harm upon them. Researchers have flouted key ethical principles by not following procedures, such as disregarding consent processes, failing to maintain confidentiality, and neglecting to protect the best interests of Indigenous participants (Dawson, Toombs & Mushquash, 2017). In fact, research has often served to further a colonial agenda by disregarding local protocols, prioritizing Western knowledge over Indigenous knowledge, and reinforcing harmful stereotypes that frame Indigenous communities as a problem to be solved (Dawson et al., 2017; Tuhiwai Smith, 1999). Such a legacy of mistreatment in research has left Indigenous peoples wary of outsiders who want to conduct research in their communities (Tuhiwai Smith, 1999). Furthermore, past harms perpetuated by the research community present a moral imperative to scholars seeking to study Indigenous communities; that is, we critically examine research practices and how they are experienced by Indigenous partners, such that, together, we may conduct research positively and constructively.

Since the 1970s, Indigenous groups in Canada and the US have asserted their right to control the type and scope of research, and how it is conducted in Indigenous communities (Castleden, Morgan & Lamb, 2012; Laveaux & Christopher, 2009). As a result of this, academics and Indigenous leaders have refined recommendations for research in Indigenous settings (Canadian Institutes of Health Research & Canada Institutes of Health Research, 2008; Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2014b; Solomon & Randall, 2014). These recommendations call for greater accountability to researcher-community relationships, to observation of cultural protocols, to respect for local worldviews, and to shared power and decision-making throughout the research process (Canadian Institutes of Health Research & Canada Institutes of Health Research, 2008); all of which are values that are reflected in CBPAR theory (Minkler & Wallerstein, 2008).

CBPAR is synonymous with many other terms for participant-driven research, the most common of which being 'community-based participatory research' (CBPR) and 'participatory action research' (PAR); however, the list of terms is extensive (Minkler & Wallerstein, 2008). These research orientations share many features, and therefore, in this paper, I referred to them collectively as 'community-based participatory action research' (CBPAR). CBPAR designs prioritize community interests, use culturally-relevant data collection strategies, and include phases devoted to mobilizing findings for community benefit (Kemmis & McTaggart, 2000; Wadsworth, 1998). Given the similarities between Indigenous research values and those espoused by CBPAR, it is no surprise that CBPAR, and its participatory research relatives, are recommended by ethical guidelines for research with Indigenous populations (Canadian Institutes of Health Research & Canada Institutes of Health Research, 2008; Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2014a; Sahota, 2010).

As CBPAR methods take hold in the academy, evidence is emerging that demonstrates that involvement in participatory research partnerships can help improve policy and increase capacity (Wallerstein et al., 2008), as well as reduce health disparities (Wallerstein & Duran, 2006) in participating communities. CBPAR partnerships with youth may serve to promote youth agency,

social justice awareness, knowledge about the research topic, academic and career motivation, and interpersonal skills; it also enhances relationships with adults (Anyon, Bender, Kennedy & Dechants, 2018; Shamrova & Cummings, 2017).

Achieving ideals of CBPAR is much more challenging in practice than is suggested in theoretical writings (Tuhiwai Smith, 1999). University policies and research attitudes have not yet evolved to the level where they sufficiently embrace the central components of CBPAR (Steigman & Castleden, 2015; Wilson, Kenny & Dickson-Swift, 2018). Delays and limitations imposed by university procedures may inhibit relationship-building between university and community partners, deter shared decision-making, and hinder the ability of researchers to adjust approaches to meet local context as studies unfold. Reflexive approaches are unlike traditional scientific research methods that include pre-determined and rigidly-followed steps. Furthermore, despite stated commitment to catering to community interests, university researchers may uptake community suggestions selectively based on their own assumptions about what is effective or worthwhile (Cornwall & Jewkes, 1995; Shamrova & Cummings, 2017). Power is rarely completely devolved to community partners, despite the fact that they may not desire to accept full responsibility for research (Cornwall & Jewkes, 1995). Communities partners have competing priorities, and interest in research may fluctuate over time, resulting in inconsistent compositions of research teams (Cornwall & Jewkes, 1995).

CBPAR has the potential to contribute to an improved legacy of research with Indigenous communities. However, the practice of CBPAR may be outpacing our knowledge about key processes and outcomes. Insufficient assessments have been completed on the methods of CBPAR, and on techniques to conclusively determine how participation in CBPAR partnerships impacts people and communities. Exploring outcomes of CBPAR in Indigenous communities is essential for successful advancement of these methodologies. Given the strained relationship between Indigenous communities and research, as well as additional challenges associated with engaging youth as partners in CBPAR, an examination of CBPAR with Indigenous youth is required. Indigenous youth are the fastest-growing demographic in Canada and face distinct socio-economic adversity, positioning them as a population of particular research interest (First Nations Child & Family Caring Society of Canada, 2019). Similar trends are found in the US,

where approximately 32% of American Indians and Alaska Natives are under the age of 18, compared to 24% in the general American population (National Congress on American Indians, n.d.). If scholars are interested in conducting additional research with Indigenous youth, it is critical that methods for working with this population be refined to ensure that research does not place undue burden on young people.

This scoping review identified studies in the academic peer-reviewed literature in which Indigenous youth in Canada and the US were engaged as decision-makers in CBPAR projects in order to answer the following questions:

1) What is the scope and nature of CBPAR projects that involve Indigenous children or youth as decision-makers in terms of who was involved, when and where the projects took place, and the research objectives and topics?

2) What is the nature and extent of youth engagement in CBPAR projects in relation to project objectives, research questions, methods, and/or knowledge translation and action strategies?

3) To what extent are youth engaged in decision-making around research objectives, questions, methods, and/or knowledge translation and action strategies?

4) How do youth feel about being involved as research partners and decision-makers in CBPAR, and do they experience any personal outcomes as a result of their participation?

5) What are common challenges and facilitators for engaging youth as research partners and in decision-making in CBPAR?

This scoping review sought to yield new information about the breadth and nature of CBPAR conducted in partnership with Indigenous youth, and how youth are affected by their inclusion in research processes. Summarizing recurring strengths and limitations of youth engagement strategies in recent CBPAR experiences serves to propose recommendations for future practice of CBPAR, and contributes to the evolution of research methodologies that align with the goals of reconciliation with Indigenous peoples in Canada and the US. CBPAR methods may be a useful approach to research across diverse disciplines, including topics relating to health promotion.

CHAPTER 2   BACKGROUND

2.1 INDIGENOUS POPULATIONS IN CANADA AND THE US

This scoping review considers research with Indigenous populations in Canada and the US, including First Nations, Métis and Inuit peoples in Canada and Native Americans, Alaska Natives, and Natives Hawaiians in the US. Canada and the US both lie on Turtle Island, a term originating in various Indigenous oral histories that describe the continent of North America (Robinson, 2018). North America consists of 23 countries in Northern America, Central America, and the Caribbean ("North America," n.d.). Of these countries, Canada and the US share a special relationship because they both signed the Jay Treaty in 1794, allowing for free mobility of Indigenous people across the border (Sutherland, 2017). Indeed, many Indigenous Nations' territories lie on both sides of the Canadian-US border, and thus individuals in those territories also share community history. Indigenous peoples have lived on Turtle Island since time immemorial, with human remains having been dated as far back as ~10,300 years B.P. (Lindo et al., 2017).

According to the most recent government estimates, First Nations, Inuit and Métis populations are growing at more than four times the rate of the general Canadian population (Statistics Canada, 2017a). Indigenous individuals now account for 4.9% of the Canadian population, compared to 3.8% in 2006 (Statistics Canada, 2017a). Numbers of Indigenous youth are rising particularly quickly, with the average age of Indigenous peoples being almost a decade younger than their non-Indigenous counterparts (30.9 years compared to 40.1 years) (Statistics Canada, 2017a).

2.1.1 Socio-economic and Health Disparities

Canada and the US are politically distinct entities, and the Indigenous populations within them represent distinct cultural and ancestral groups. However, Indigenous populations in both countries share the common experience of extensive marginalization that began with policies introduced by European colonizers, which set the framework for inequitable conditions and

outcomes among Indigenous peoples today. In this regard, Indigenous communities experience disproportionately poorer health and social outcomes relative to the non-Indigenous population (Cooke, Mitrou, Lawrence, Guimond & Beavon, 2007; Hutchinson & Shin, 2014; Smylie, Fell & Ohlsson, 2010; Wendt et al., 2019). This disparity is confirmed by comparatively low Human Development Index (HDI) ratings, as identified by the United Nations Development Program (Cooke et al., 2007). More recent statistics confirm disparities between Indigenous and non-Indigenous populations in Canada, as demonstrated by the Community Well-being Index (Statistics Canada, 2015) and in numerous physical and mental health outcomes (Hajizadeh, Bombay & Asada, 2019; Hutchinson & Shin, 2014). Similar inequities are faced by Indigenous populations in other countries including Australia and New Zealand, who also encounter assimilative and expulsive tactics employed by European colonizers (Cooke et al., 2007).

Indigenous peoples of all ages face systemic inequality borne by the country's colonial history. Chronic marginalization of Indigenous communities' manifests itself in unfavourable social determinants of health, i.e., the socio-economic and physical environments that shape health outcomes of entire populations (Canadian Council on Social Determinants of Health, 2015; Czyzewski, 2011). This relationship between environment and wellness has been used to explain marked health disparities among marginalized and affluent social groups. Indigenous peoples cope with adverse socio-economic and physical environments, including being less likely to live in adequate housing conditions (Statistics Canada, 2017b), to complete high school, and to be employed (Kelly-Scott & Smith, 2015). Inequitable social determinants of health contexts such as these are associated with disparate health outcomes across Indigenous groups, including higher incidence of chronic health conditions (Kelly-Scott & Smith, 2015) and adverse birth outcomes (Sheppard et al., 2017).

The causes of disparate health outcomes among Canada's Indigenous population reach beyond current social determinants of health. An increasing number of studies on intergenerational trauma draws relationships between Canada's violent colonial history, and the health and socio-economic disparities that Indigenous peoples experience today (Aguiar & Halseth, 2015; Bombay, Matheson & Anisman, 2014; Kirmayer, Gone & Moses, 2014). Intergenerational transmission of trauma is associated with higher levels of social dysfunction, alcohol and drug-

dependency, and domestic violence in new generations (Bombay et al., 2014; The Truth and Reconciliation Commission of Canada, 2015; Wilk, Maltby & Cooke, 2017). Therefore, effects of past traumas are not restricted to past generations, and Indigenous youth shoulder a great deal of stress associated with enduring impacts of intergenerational trauma (Bombay et al., 2014; Kirmayer, 2015; Kral, 2013). An indirect result of generations of stressors before them, Indigenous youth currently present higher rates of teen pregnancy (Sheppard et al., 2017), incarceration (The Truth and Reconciliation Commission of Canada, 2015), violent victimization (Boyce, 2016) and involvement in foster care (Turner, 2016) than their non-Indigenous counterparts.

2.1.2   Research with Indigenous Peoples in Canada and the US

In her seminal text, *Decolonizing Methodologies: Research and Indigenous Peoples* (2012), Linda Tuhiwai Smith illustrates how extensively research is tied up in colonialism. She opens the text with:

> "Research is inextricably linked to European imperialism and colonialism. The word itself, 'research', is probably one of the dirtiest words in the indigenous world's vocabulary. When mentioned in many indigenous contexts, it stirs up silence, conjures up bad memories, and raises a smile that is knowing and distrustful". (Tuhiwai Smith, 2012, p. 30).

A colonial legacy of research 'on' Indigenous peoples ranges from studies that provided them no meaningful benefit to those that inflicted great harm upon them (Goodman, Morgan, Kuehlke & Fleming, 2018). Demonstrative of this sentiment is an Elder's oft-referenced declaration at a conference discussing ethics in research involving Indigenous peoples: "We've been researched to death" (Castellano, 2004, p. 98). Much research of the 20th century aimed to reinforce models of Indigenous cultural and genetic deficiency (Sue and Sue, 1990). Even scholars who intended to conduct research in an ethical manner have often failed to abide by traditional protocols, or have misrepresented Indigenous cultures in publications (see, for example, Foulks, 1989). Consequently, it is not surprising that many Indigenous communities respond to 'outsider' research proposals with apprehension; they are exhausted from the time and energy required to

participate in research, and skeptical that their people and cultures will be treated with respect (Rasmus, 2014).

Research is a colonizing act, realized in epistemological imperialism – the idea that the colonizer's knowledge is superior – and a fascination with understanding the 'other' (Tuhiwai Smith, 1999). Conventional science asserts that research is an objective process, demanding uncritical acceptance of the knowledge it generates, and discrediting alternative ways of understanding (Fletcher, 2003). Acceptance of the alleged 'rationality' of the scientific process has perpetuated a long history of disrespectful and unethical research practices in Indigenous communities. Past dynamics between scholars and Indigenous communities of interest have been described as 'break-and-enter approaches,' 'helicopter research' or 'parachute researchers', where academic researchers flew into Indigenous communities, collected data, and then left, rarely reporting findings back to the Nation (Bird-Naytowhow, Hatala, Pearl, Judge & Sjoblom, 2017; Castleden, Garvin & Huu-ay-aht First Nation, 2008; Sahota, 2010). A pattern of researchers entering and taking information without leaving anything in return emerged (Minkler & Wallerstein, 2008). These approaches undermine the integrity of Indigenous communities, their knowledge, and their right to benefit from participation in knowledge generation. Indigenous peoples carry the baggage of mistreatment in past research in their communities; it affects experiences in new research projects, sometimes precluding entry of researchers to the community altogether (Minkler & Wallerstein, 2008).

Colonization is not just a project of the past; it persists into the present, "enacted in relationships of power and privilege" that maintain disparate experiences and outcomes between Indigenous and non-indigenous Canadians (Rowhani & Hatala, 2017, p. 46). Modern colonialism may manifest in overt or covert ways. For example, scholars have perpetuated colonialism by devaluing Indigenous ways of knowing and dismissing traditional teachings as primitive superstitions (Canadian Institutes of Health Research et al., 2014b). Other researchers have sought to better understand Indigenous experiences and issues, however, this motivation can have an othering effect on Indigenous peoples, framing them as a problem to be solved by non-Indigenous saviours (Bird-Naytowhow et al., 2017).

Increasing numbers of scholars, research institutions, and Indigenous communities are generating guidelines for research that are conscious of poor practices of the past (i.e., Canada Institutes of Health Research, 2008; Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2014a; *Ownership, Control, Access and Possession (OCAP^{TM}): The Path to First Nations Information Governance.*, 2014). The hope is that developing guidelines specific to research in Indigenous communities will help researchers of all backgrounds generate more appropriate and relevant proposals when interested in conducting research in Indigenous settings. They endorse higher ethical standards when it comes to research with Indigenous people. These guidelines have opened dialogue about shared interests and points of difference between the objectives of researchers and Indigenous communities who engage in research (Canadian Institutes of Health Research et al., 2014a). No specific guideline for conducting research with Indigenous communities is comprehensive or conclusive about what is most appropriate in all settings; they do, however, agree on many key tenets, such as the fact that it is no longer acceptable for research to occur in Indigenous communities if it is not informed by Indigenous peoples, and identified as beneficial to the community involved.

2.2 COMMUNITY-BASED PARTICIPATORY ACTION RESEARCH (CBPAR)

In simplest terms, CBPAR is about helping a group solve a problem and learn together in the process (Tax, 1975). Broader in scope than a single method, CBPAR is a research orientation founded on active engagement of the population of interest, integration of participant interests and needs, capacity-building, and action that opposes identified adversities (Shamrova & Cummings, 2017; Tuck, 2009). CBPAR is not, "an optional variant or specialist technique" (Wadsworth, 1998, para. 3); rather, it is a more inclusive approach to conducting research. In these ways, CBPAR seeks to restore power to research participants, and ensure that they experience reciprocity for engaging in research (Tuck, 2009).

CBPAR is emerging as a popular and highly-endorsed strategy for research involving marginalized populations, including Indigenous communities across North America (Laveaux & Christopher, 2009; Rasmus, 2014; Sahota, 2010). It is considered a suitable approach to research

with youth and other marginalized communities because it addresses power imbalances embedded in research relationships, and offers an array of data collection strategies that are appropriate for the population of interest (Castleden et al., 2008). Rising practice of CBPAR has introduced many new research values and concepts to the academy, including acceptance of alternative epistemologies, sharing of power, and pursuit of social justice. Increasing use of CBPAR frameworks can be attributed to greater acknowledgement of the needs of Indigenous and other marginalized communities, and institutional support from federal and community research agencies.

2.2.1 Terminology: How CBPAR Relates to Other Participatory Research Approaches

CBPAR refers to an entire participatory research paradigm, which encompasses an extensive list of methodology terms, the most popular of which being 'participatory action research' (PAR) and 'community-based participatory research' (CBPR), especially in the health field (Minkler & Wallerstein, 2008). Other terms include 'action research', 'community-engaged scholarship', and 'youth-empowerment research'. Each named approach differs in terms of the elements of participant-driven research it emphasizes. These distinct approaches have intermingled extensively over time, resulting in increasing convergence in key theories and objectives (Minkler & Wallerstein, 2008). While differences between terms still exist, they share many core principles, including community engagement and action elements; to this end, I have considered them as a single research orientation, referred to as 'community-based participatory action research', or 'CBPAR', in this thesis.

The diverse vocabulary used to describe participatory research methods, which I referred to collectively as CBPAR, speaks to a lack of organization and cohesion in this body of literature. The list has long called for clarification and transparency about assumptions of each variation (Trickett & Espino, 2004). Indeed, the CBPAR literature has been criticized for inconsistent application of individual participatory research terms (Minkler & Wallerstein, 2008), which undermines clarity about the similarities and differences between approaches. To this end, it is important to name the features that characterize CBPAR, as it is understood in this thesis.

CBPAR refers to research designs that focus on the three characteristics embedded in its name: community-basis, participation, and action. Research designs under the CBPAR umbrella share a set of core values based in these features (Cornwall & Jewkes, 1995; Sahota, 2010; Wadsworth, 1998), including:

- Relevance to community values and interests;
- Building on community strengths and capacities;
- Inclusion of community members and research participants in development of research goals and procedures, data collection, interpretation of findings, and knowledge dissemination;
- Sharing of power among participants and researchers;
- Mobilization of knowledge for action.

2.2.2 Historical Roots of CBPAR

A number of distinct research histories converged to inform CBPAR, as it exists today. Origins of most participatory research approaches have been traced back to two distinct histories: the 'Northern' tradition of collaborative research for practical system improvement, and the 'Southern' tradition of emancipatory and anti-colonial research (Minkler & Wallerstein, 2008).

The 'Northern' tradition. The Northern history of CBPAR is associated with the development of action research by social psychologist, Kurt Lewin, in the 1940s (Kemmis & McTaggart, 2000; Wallerstein & Duran, 2008). Many researchers before Lewin had endowed scholarship with community participation and action, but Lewin proposed a discrete theory called action research, availing a useable research methodology. Action research processes engage individuals from the community, or setting of interest, as researchers seeking solutions to their own problems. Lewin's methodology sought to address the gap between theory and practice in order to solve practical problems. By conducting research in partnership with the population of interest, knowledge generated could be more readily mobilized for the community's benefit (Minkler & Wallerstein, 2008). Lewin's theory championed consensus models of decision-making in order to balance power among inquirers, who, outside of the research project, may hold strikingly different positions, associated power and privilege (Minkler & Wallerstein, 2008).

Action research includes the same stages as most archetypal research designs (i.e., planning, acting, observing, and reflecting), however these stages are repeated, such that it becomes a cycle of research rather than a linear process of inquiry (Henry-Stone, 2008; Lewin, 2004; Figure 1). Following Lewin's cycles, community inquirers launch investigations about matters of importance to them, learn from their work, and refine the approach to learn more so as to effectively address the problem. The theory rejected positivism and empowered community inquirers to identify various intersections ('truths') about shared conditions.
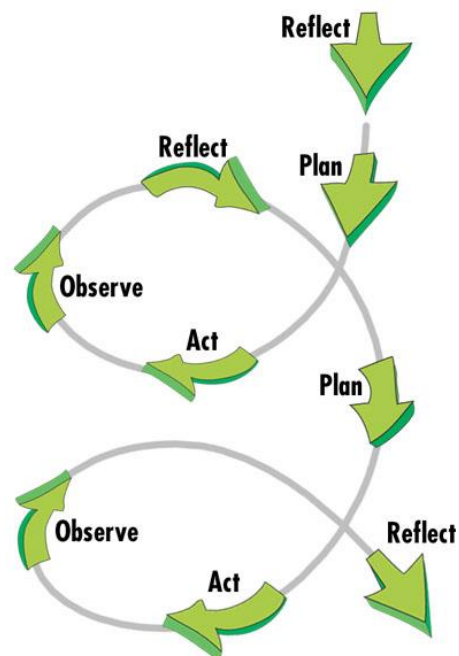
Figure 1   The repeating cycles of action research proposed by Kurt Lewin (Figure sourced from http://cei.ust.hk/teaching-resources/action-research).

The 'Southern' tradition. The Southern tradition of CBPAR emerged in Latin America, Asia and Africa in response to critical social inequality, and valued learning from people's lived experiences (Minkler & Wallerstein, 2008). Rooted in liberation theology, researchers taking this approach grappled with issues of power distribution in research relationships and sought to shift the locus of power to groups who have traditionally been disempowered in research contexts (Henry-Stone, 2008). Knowledge generation was relocated from the ivory towers of universities to community-based organizations and communities themselves (Minkler & Wallerstein, 2008).

Many researchers and community leaders across the globe contributed to the evolution of the Southern liberationist research paradigm; however, Brazilian philosopher, Paulo Freire, is most often identified as the face of the movement. Freire's liberation-minded research of the 1970s transformed the structure of research from one that saw communities as objects of study to one that saw them as partners in knowledge generation (Herr & Anderson, 2005; Minkler & Wallerstein, 2008). As in the Northern tradition, Freire challenged positivist ways of knowing, asserting that reality is not an objective truth or facts to be discovered, but "includes the ways in which the people involved with facts perceive them. […] The concrete reality is the connection between subjectivity and objectivity, never objectivity isolated from subjectivity" (1982, p. 29). Freire acknowledged cultural and social dimensions of oppression, and recognized that research has and does reinforce these systems of oppression, thereby acting as a colonizing force (Minkler & Wallerstein, 2008). The Southern tradition of participatory research opposed colonizing tendencies in research by affirming validity of subjective experiences and traditional knowledge.

2.2.3   Institutional Contributors to Rising Popularity of CBPAR in Indigenous Communities in Canada

In light of certain key differences between CBPAR and traditional research paradigms, accessing funding and institutional support for CBPAR projects has been a challenge. Funding agencies prefer to support research that follows a specified set of procedures and that can be completed within the parameters of a pre-determined timeline. CBPAR violates traditional norms that are expected by funders because it is responsive to community context, and committed to evolving iteratively based on what is learned, and how community partners choose to proceed. However, in the 1970s, the first institutions sponsoring participatory research initiatives emerged (Minkler & Wallerstein, 2008). At the turn of the century, more institutional support came forward, promoting growth of CBPAR practices in Canada and the US.

Institutional support arose in two ways: as official research guidelines promoting knowledge-user participation in research design and conduct, and as funding opportunities available for participatory research initiatives (Castleden et al., 2012). Uptake of CBPAR methods was particularly noticeable among bodies concerned with research in Indigenous communities.

Starting in the 1980s, Indigenous research ethics policies and statements emerged across Canada (Association of Canadian Universities for Northern Studies, 2003; Canadian Institutes of Health Research & Canada Institutes of Health Research, 2008; Canadian Institutes of Health Research et al., 2014a). These policies continue to be updated and refined as interests change, and as academic and Indigenous communities learn from one another. Newer editions endorse key characteristics of CBPAR, and even name participatory methods as a suitable approach in many Indigenous settings (Canadian Institutes of Health Research & Canada Institutes of Health Research, 2008; Canadian Institutes of Health Research et al., 2014a; Sahota, 2010). Policies from regulatory bodies such as Canadian Institutes of Health Research (CIHR) had a national impact, an impact that was furthered by the development of similar policies, as well as review boards for research ethics comprised of Indigenous communities and organizations. Now, a great deal of Indigenous communities require that all research proposals submit to a local ethical review in addition to any reviews performed at a post-secondary institutional ethics board (see for example, "Mi'kmaw Ethics Watch," n.d.).

In 2000, the Social Sciences and Humanities Research Council (SSHRC) launched the Community-University Research Alliances (CURA) program, a funding opportunity for research designs that facilitate collaboration between post-secondary institutions and community organizations (Social Sciences and Humanities Research Council, 2013). By way of CURA, SSHRC recognized that communities best understand their own needs and resources. The rationale behind CURA was that in working together, university-community research teams could galvanize their respective strengths and resources to develop new knowledge, and propose solutions to challenges in Canadian communities. Around that same time, CIHR launched the Aboriginal Capacity in Research Environment (ACADRE) network, which served to connect Indigenous communities and health sciences. Nine centres for research came into existence during the existence of the ACADRE network. In 2007, these centres were rebranded as Network Environments for Aboriginal Health Research (NEAHR). For just over a decade, NEAHR promoted capacity for health research and research excellence in Indigenous communities, prioritizing support for research proposals that demonstrate commitment to community partnerships (Network Environments for Aboriginal Health Research, 2011).

Parallel growth in support for research development in Indigenous communities, coupled with CBPAR approaches to knowledge generation, may have been a catalyst for the current participatory research movement in Indigenous settings in Canada and the US. Certainly, researchers are now more capable of accessing financial and institutional support for research founded in community partnerships, as well as with research support networks that align with CBPAR approaches.

2.2.4 Core Features of CBPAR

Participatory research approaches exist on a wide spectrum, from those that most closely resemble practical solution-oriented research (Northern) on one end, to those more reminiscent of liberationist, social action research (Southern) on the other (Minkler & Wallerstein, 2008). In light of extensive variation in participatory approaches, researchers must clearly define their methodologies and ontologies, including how those methods contribute to upholding values espoused by the participatory research paradigm. In the following sections, I describe guiding features of all CBPAR, each of which may appear entirely different in one project compared to the next. The features I identify are not a conclusive list; the participatory research literature is too expansive to be described in a short list of characteristics. The identified features are particularly prominent across individual CBPAR approaches, especially those practised in Indigenous settings.

Community participation and decision-making.

> "If all research involves participation, what makes research participatory?
> (Cornwall & Jewkes, 1995, p. 1668)

All research involving human subjects involves some form of participation. However, unlike traditional models of passive participation in research, participants in participatory research have agency to determine which topics will be investigated, how the investigation will be carried out, what will be understood from the data, and who will be informed about it. Community engagement in participatory research takes many forms. Participation options include conception

of the project, determining the objectives, choosing the methods of collecting and analyzing the data, and sharing the results with the community and beyond. Because participation can take on so many forms, it is not sufficient for CBPAR researchers to state that the community participated without providing clear explanations about who participated, for what purpose, in what ways, and to what extent (Minkler & Wallerstein, 2008).

The emphasis on community decision-making serves to increase likelihood that the research will benefit the population. Community direction in health research facilitates identification of health promotion strategies that are relevant to the population of interest and rooted in community strengths. Resulting health services are therefore more likely to be effective for the population, increasing the likelihood of long-lasting and widespread improvement in health outcomes (Minkler & Wallerstein, 2008). Furthermore, collaboration fosters community ownership over the project and the resulting interventions (Rasmus, 2014), which promotes community uptake of new services created as a result of research findings.

Models of community engagement are not all equal. Least inclusive are research designs in which community members participate merely as informants in interviews and focus groups, or through alternate data collection methods, such as participatory video-making and photography. While these alternate methods may be more inclusive than traditional methods, they still do not provide participants a great deal of control in the research process. More inclusive models may include local people who sit on research advisory boards, in group consultations, or as members of the research team. In these capacities, community members partake as researchers, coordinators, facilitators, or active decision-makers in the research process (Minkler & Wallerstein, 2008). These forms of community partnership assign true leadership in research to community representatives, and therefore affirm their agency to determine the research framework in their own community.

Ideally, CBPAR methods involve community members in the earliest stages of the process (Perry & Hoffman, 2010). Engaging community members early on, while the research plan is still developing, promotes sustained community interest through to completion of the project. University researchers (if present) and representatives from the community begin by identifying

local strengths and issues; they then collectively define research priorities suitable for the current community context. Resisting the temptation to enter research with established goals and activities before working with community partners is critical to ensure that the project is relevant to local needs and values.

Community inclusion is greatest when research proposals originate within the community itself, and when leaders or top community agencies have control over funding and research decisions (Duran & Duran, 1995). Increasingly, Indigenous associations and governments are initiating research themselves, and contracting academic collaborators and consultants for the process, as and if needed (Sahota, 2010). However, the majority of current CBPAR projects conducted with Indigenous communities are conceived and led by non-Indigenous university scholars who make most of the decisions throughout the process (Minkler & Wallerstein, 2008). University-based researchers possess resources and expertise for identifying feasible modes of inquiry and acquiring financial support that many communities do not have. Just because a research project was not conceived within the community, it can still feasibly be met with meaningful community investment. In fact, Indigenous communities in particular are developing rigorous research vetting procedures in order to identify proposals that meet local needs and elicit genuine community interest (Castleden et al., 2012); they respectfully decline to participate if that is not the case.

Re-distribution of power. Distribution of power is an important issue for CBPAR. Power discrepancies are inherent to relations between researchers and those about whom research is concerned; a discrepancy illustrated by the language of 'observer' and 'subject' (Cornwall & Jewkes, 1995). In community-based research, power relations of conventional research are often compounded with those associated with social position and identity. Community-based research teams are often composed of community representatives and researchers from outside of the community – typically university-based academics. Power discrepancies are attached to these different roles, hence, navigating complex dynamics of power and privilege is often inherent in CBPAR (Minkler & Wallerstein, 2008). The power of university-based researchers lies in access to resources (i.e., knowledge, social capital, funding) which is critical for research to be successful. Many university-based researchers also benefit from privilege associated with ethno-

racial identity and socio-economic status that cannot be ignored, especially when research is occurring in marginalized and racialized communities. When the research population of interest is a socially-marginalized community, building trust, and addressing differentials in power and privilege are even larger challenges, albeit critical for nurturing a productive university-community partnership (Castleden, Garvin, & Huu-ay-aht First Nation, 2008).

Integrity of researcher-participant relationships is threatened by the presence of power imbalances (Cammarota & Fine, 2008). Because the strength of these relationships is integral to the success of any CBPAR project, addressing the tension associated with power imbalances is a top priority. Even in pre-existing and authentic partnerships, managing power differentials entails significant emotional work and commitment from all members of the research team. CBPAR researchers who are 'outsiders' to the community are encouraged to prioritize the development and nurturing of relationships with community partners on the research team. Wallerstein and Duran (2008) suggest that research teams engage in transparent discussions and agreements about matters such as access to community informants, who will present the results of the research to the public, and who will own the data. These conversations are a good opportunity to clarify goals and priorities, as outsider and insider (i.e., community) researchers' goals rarely align completely. Indigenous communities in particular carry skepticism about researchers' intentions, resulting from historical patterns of research that did not serve community interests. Therefore, CBPAR researchers ought to discuss their goals and come to agreements that guarantee material benefits to all parties involved in the research (C. Fletcher, 2003).

Reflexivity. CBPAR is a critical and self-critical process of inquiry and change-making. Reflexivity refers to a process of regularly assessing and re-assessing the research approach (Tuck, 2009). Reflexivity involves researchers questioning their practices, their knowledge, the social structures that shape and constrain the research and the subject of inquiry, and the discourses about the research and the subject of inquiry, all of which are represented and misrepresented (Kemmis & McTaggart, 2000). Reflexivity is an important practice for all researchers, whether they are insiders (community members) or outsiders. It is embedded in Lewin's repeating cycles of action and reflection that create recurring opportunities to ensure

that the research practice in reality aligns with what the community and their collaborators set out to do.

Action.

> "Participatory action research aims to help people investigate reality in order to change
> it […] and […] to change reality in order to investigate it."
> (Kemmis & McTaggart, 2000, p. 282).

'Action' has become more emphasized in CBPAR discourse, illustrated by a shift in language from "community-based participatory research" (CBPR) to "participatory *action* research" (PAR) (Minkler & Wallerstein, 2008). All CBPAR methods mandate active participation of those who are implicated in research, but the action component embedded in CBPAR's name also requires an element of change-making informed by knowledge generated throughout the project (Canadian Institutes of Health Research et al., 2014b). More recently, action has come to be seen as essential to ethical research conducted with Indigenous populations (Sahota, 2010). Results ought to be imminently useful to the community, and must certainly outweigh disturbances imparted by the research process (Tax, 1975). The action-orientation moves away from past research dissemination trends that were often limited to publication in academic journals – an action with little to no impact on the community – to application of study findings in ways that are meaningful, as identified by the community where the research took place. Action is not restricted to the project end; CBPAR projects often integrate action at multiple stages, reinforcing the importance of the inquiry and community investment in its success.

2.2.5 Ways of Knowing and Being in CBPAR

Because research encompasses the creation and use of knowledge, researchers must familiarize themselves with diverse theories of knowledge and seek out an approach that aligns best with the local setting. Just as CBPAR teams must interrogate methods to make sure they are suitable for the community of study, they must also interrogate their assumptions about how researchers can position themselves and their knowledge in a collaborative inquiry. CBPAR refutes two key assumptions of conventional scholarly research: (1) that there is one single, true reality; and (2)

that researchers must be impartial observers. These two assumptions speak to epistemology – philosophy of the nature, extent, and limits of knowledge – and positionality – where a researcher stands in relation to other people involved in the study.

Positivism. Traditional Western research maintains a positivist view of knowledge; that is, that there is one objective truth about the reality under study (Creswell & Creswell, 2018). Many qualitative researchers criticize positivism for a tendency to reduce complicated phenomena into discrete, testable ideas, resulting in the loss of meaning and context. CBPAR approaches challenge positivist science and embrace local worldviews (Minkler & Wallerstein, 2008). Outsider researchers interested in doing CBPAR ought not assume that their own worldviews are the 'right way of understanding things' (Minkler & Wallerstein, 2008). If researchers are not critical of their own epistemologies, they may mistakenly position 'Western' knowledge as superior to Indigenous ways of knowing, thus perpetuating imperialism in their research practice (Bird-Naytowhow et al., 2017). Especially when researchers are outsiders and possess very different social identities than those in the community, it is likely that their ways of seeing the world diverge from those espoused by the local community.

Constructivism. Qualitative researchers tend to favour a constructivist approach to knowledge, which posits that knowledge and meaning develop in a social context. Individuals cultivate subjective understandings of the world based on their experiences (Creswell & Creswell, 2018). It is therefore the researchers' role to embrace a multiplicity of views. Consistent with constructivism, CBPAR exercises tolerance for ambiguity in research processes and outcomes (Tax, 1975). CBPAR recognizes the role of individuals in shaping understandings of the topic under study (Wallerstein & Duran, 2008). Where research partners come from different backgrounds, it is inevitable that partners will derive different meanings from the same process of inquiry. CBPAR values these differences, especially where experiential knowledge of community members allows them to understand the research in a unique way. Everyone is a co-learner, listening to and discussing views with one another in order to co-construct a shared understanding of reality (Minkler & Wallerstein, 2008).

The transformative worldview. Critical social theory is a common epistemology in CBPAR literature. According to critical social theory, knowledge is historically and socially constructed (Minkler & Wallerstein, 2008). Conclusions about the meaning of research must consider the social structures that shape and constrain people's choices. Researchers may choose a specific theoretical lens to guide their understandings of research findings. Theoretical lenses, such as feminism, post-structuralism, and post-colonialism draw attention to specific realms of oppression that are relevant to the topic under study (Minkler & Wallerstein, 2008).

Creswell and Creswell (2018) refer to emancipatory-minded theories (i.e., critical social theory, feminist theory, post-colonial theory, etc.) as members of the transformative worldview. This approach to knowledge goes one step further than constructivism by not only acknowledging how meaning is shaped by the world, but also by asserting that research must confront social oppression and strive for sociopolitical change. Likewise, theoretical approaches to knowledge used in CBPAR tend to consider structures of oppression, celebrate community strength and agency, or strive to use research to achieve social justice (Minkler & Wallerstein, 2008). As in CBPAR discourse, the transformative worldview insists that research be carried out collaboratively to avoid further marginalizing the population of interest.

Positionality.

> "If you have come to help me, you are wasting your time. But if you have come because
> your own liberation is bound up with mine, then let us work together."
> (Aboriginal activists group, 1970s).

CBPAR challenges traditional positioning of researchers as 'all-knowing silent interrogators' that is characteristic of conventional positivist research (Minkler & Wallerstein, 2008). As equal partners in the inquiry, university and community partners are not required to maintain objectivity and distance (Tax, 1975). In fact, it would be unreasonable to assume that any person is truly capable of separating their personal experiences and beliefs from those they encounter in research. Researchers are therefore encouraged to reflect on their experiences and internalized beliefs, and consider how these affect their actions and understandings. Furthermore, because

CBPAR always takes an intervention activist approach, researchers are intended to influence the process and outcomes of research. Sol Tax – an early practitioner of CBPAR in Native American communities – suggested that because CBPAR researchers cannot position themselves simply as observers, they lose 'the comfortable familiarity of objectivity' (1975, p. 516). As an active agent in research, inquirers take on a heightened sense of accountability to research partners and participants in order to conduct research in a positive way.

Critical consciousness and praxis. Indeed, in accordance with the transformative worldview, CBPAR approaches strive to *transform* the lives of inquirers, whether they be university- or community-based (Minkler & Wallerstein, 2008). Freire believed that dialogue exchanged through research can and should transform people's perspectives, a phenomenon he called 'conscientization' or 'critical consciousness' (Freire, 1982). By developing consciousness about forces of oppression, people become motivated to engage in praxis, that is, to take action to improve their lives based on what they have learned. Wallerstein and Duran (2008) explained that in order for individuals to experience critical consciousness, it is critical that they be involved in efforts to identify problems, and that they engage with that knowledge personally in analysis processes. Conscientization and praxis are fostered by repeated cycles of reflection and action in order to promote change. Over time, repetition and personal reflection, inquirers may link cognitive understandings with visceral and emotional experiences, endowing the research process with deep personal meaning (Minkler & Wallerstein, 2008). While this process is relevant to local and non-local researchers, it is particularly important for researchers from the community whose lives are most affected by the topic of inquiry, and whose lived experiences are most relevant to understanding that topic.

2.3   CBPAR in Indigenous Settings

CBPAR is a historically-conscious approach that enables research to be conducted in a locally-relevant way. In Indigenous settings, CBPAR is responsive to cultural protocols and worldviews; which were occasionally overlooked in many past research programs. As such, American and Canadian Indigenous groups alike have published recommendations that endorse the usefulness

of CBPAR frameworks for generating knowledge in Indigenous communities (Canadian Institutes of Health Research & Canada Institutes of Health Research, 2008; Sahota, 2010).

2.3.1 Historical Consciousness

"Research is not an innocent or distant academic exercise, but an activity that has something at stake, and that occurs in a set of political and social conditions." (Smith, 1999, p. 36).

CBPAR is responsive to a painful, colonial-minded history of research in Indigenous communities, and attempts to rectify mistakes of the past by, for example, upholding community ownership of data and delegating decision-making power to community members (Sahota, 2010). By opposing past colonial approaches to research, CBPAR frameworks have the potential to change Indigenous communities' collective experience with research (Rasmus, 2014).

When research approaches incorporate actions that intend to rectify colonial attitudes, they are sometimes described as 'decolonizing' methodologies, which acknowledge that research, as we know it in the Western world, has often performed a colonizing role. In order to 'decolonize' research, researchers must question dominant scholarly practice and privilege Indigenous voices (Tuhiwai Smith, 1999). Like CBPAR, decolonizing methodologies emphasize self-determination and social justice. Many iterations of decolonizing research integrate cultural protocols and values as central in research design, as directed by local partners and researchers. The flexibility offered by CBPAR allows researchers to employ creative strategies that celebrate local ways of knowing, and facilitate meaningful participation of community members who are not versed in traditional research methods.

Colonial assumptions are pervasive in Western scholarship, so unlearning these mentalities may pose a challenge for non-Indigenous researchers whose training is entirely based in the Western academy (Cornwall & Jewkes, 1995; Tuhiwai Smith, 1999). Nevertheless, academics ought to stay conscious of the historical forces that shape how Indigenous peoples experience research in their communities in order to avoid repeating harms perpetrated by their predecessors. Reflexive

practices inscribed in CBPAR assist researchers in performing the self-interrogation that is necessary in these circumstances.

2.3.2 Local Relevance

As a responsive and iterative framework, CBPAR can modify processes in ways that are culturally acceptable and relevant to the community of study; and indeed, this will look different in every community (Sahota, 2010). CBPAR researchers can begin deconstructing colonial trends by orienting their work toward core Indigenous values, including sovereignty, respect, reciprocity, and trust. The specific values and cultural approaches taken must be chosen by community members on a case-by-case basis, as cultural values vary among Indigenous peoples and settings. Studies may engage participants from diverse backgrounds whose culture is less defined by Indigenous ancestry than by another community to which they claim membership (i.e., an LGBT+ or arts professions community), in which case emphasis on traditional values may not be appropriate.

In some cases, Indigenous participants may have no interest whatsoever in integrating traditional approaches. However, for many Indigenous communities, traditional worldviews should report on the entire research process as directed by the partnered community. Indeed, a conversation about ways to 'indigenize' research is currently underway in academic literature (see, for example, Rasmus, 2014). 'Indigenist' research paradigms take the rights of Indigenous peoples seriously, and highlight politics of Indigenous identity and cultural action (Tuhiwai Smith, 1999). For example, the *Elluam Tungiinun* project incorporated an 'indigenizing stage' into the CBPAR process before embarking on data collection and other research activities (Rasmus, 2014). During the indigenizing stage, Yup'ik Alaska Native researchers articulated local values and traditional teachings relevant to their project. Community partners expressed that the indigenizing stage deepened their sense of involvement throughout the course of the project. Furthermore, this stage promoted open communication among team members, meaningful integration of Yup'ik knowledge and values into the research process, and persistence of the project through stressful moments (Rasmus, 2014). Likewise, Bird-Naytowhow and colleagues (2017) endorse including Indigenous ceremony in all research activities. Doing so endows the

entire process with spiritual significance, making participation more personally meaningful for all research team members (Bird-Naytowhow et al., 2017).

2.3.3 Indigenist Ways of Knowing and Doing

Championing Indigenous voices is one way that CBPAR can oppose colonial research traditions that position university researchers as the inherent experts in scholarship (Kajner, 2015). Constructivist and transformative approaches to knowledge generation, as discussed earlier, facilitate co-creation of knowledge that privileges Indigenous partners' perspectives and Indigenous ways of knowing. One way to generate knowledge in a university-community collaboration is by employing the guiding principle of 'Two-Eyed Seeing,' which frames Indigenous and 'Western' epistemologies as complementary knowledge systems that should be respected equally. Two-Eyed Seeing originates from teachings of late Mi'kmaq chief Charles Labrador of Acadia First Nation, and practised and named by Mi'kmaq Elders, Murdena and Albert Marshall. In research, two-eyed seeing applies both Indigenous and Western ways of knowing to data analysis, and then bridges them to form a new, more robust understanding of data (Iwama, Marshall, Marshall & Bartlett, 2009; Martin, 2012).

2.4 YOUTH ENGAGEMENT IN CBPAR

Youth participatory action research (YPAR) has emerged as a distinct domain of CBPAR that centres youth in generating knowledge about issues that implicate them. YPAR takes a special interest in effective strategies for engaging youth as research partners (Rodríguez & Brown, 2009). Increased emphasis on youth participation in research has emerged in the wake of a larger movement toward youth inclusion in all processes that affect their lives, such as medical decisions and legal proceedings (Shamrova & Cummings, 2017).

Low levels of youth participation in research parallels general underrepresentation of young voices in society (Shamrova & Cummings, 2017). For a long time, popular opinion has held that children 'simply do not have the decision-making power of adults' and therefore it is naïve to think that their participation could contribute anything of value (Hart, 1992, p. 5). However,

youth are in the best position to interpret their experiences and offer insights about issues they face (Anyon et al., 2018). Previously, youth participation in research was often limited to youth as a source of data. By not including youth in the analysis of data, meaning is constructed from an adult perspective and may not accurately represent the realities or interests of youth (Shamrova & Cummings, 2017). Including youths' voices is intended to mitigate adult-centrism in knowledge generation (Shamrova & Cummings, 2017). Furthermore, engaging youth from marginalized communities as co-researchers, rather than as passive participants, has been shown to increase the scope, significance and applicability of research findings (Bird-Naytowhow et al., 2017).

2.4.1   A Continuum of Youth Engagement Styles

Hart developed a model of general child participation that may be used to assess youth inclusion in participatory research (Hart, 1992). Note that while Hart uses the term 'child' in his typology of participation, it is applicable to participation of youth of all ages. The 'ladder' of child participation is outlined in Appendix A, and includes eight tiers:

1. *Manipulation* (non-participation): Adults tell children what to do, and children have little to no understanding of the project;
2. *Decoration* (non-participation): Children are present at activities, under no pretense that they are active participants in the project;
3. *Tokenism* (non-participation): Children are given a limited platform to share their thoughts;
4. *Assigned but not informed*: Children understand the project and perform roles that were pre-determined by adults;
5. *Consulted and informed*: Adults design and run the project, during which children are consulted and their views are considered. Child participants have full understanding of the project;
6. *Adult-initiated, shared decisions with children*: The project was initiated by adults, but children are included in every decision and stage of the project;
7. *Child-initiated and directed*: Children initiate the project and carry it out with adult support available, but adults do not take charge;
8. *Child-initiated, shared decisions with adults*: Children initiate the project and invite adults to join them in making decisions.

The first three levels of Hart's ladder are identified as non-participatory, because youths' presence is superficial, and has no true bearing on project processes or outcomes. The hierarchy of youth participation that Hart illustrates places the highest levels of youth agency at the top (level 8), where youth voices define research and adult support and input is introduced only at youths' request. That does not go to say that lower rungs of Hart's ladder are 'bad'. Hart concedes that there are many examples of youth participation in projects that were entirely adult-planned and executed, which served as an enjoyable and fulfilling experience for all, though perhaps not to the extent possible at higher levels of youth inclusion (1992).

2.4.2   Potential Positive Outcomes for Youth Partners

Integrative reviews of youth-CBPAR indicate youth outcomes such as increased awareness of social justice, perceived ability to make change, social and cognitive development, and improved relationships between youth and adult community members (Shamrova & Cummings, 2017). The most common shortcoming of youth-focused CBPAR methods is inadequate integration of youth throughout the research process (Jacquez, Vaughn & Wagner, 2013; Shamrova & Cummings, 2017). In their systematic review of participatory action research methods with youth, Anyon and colleagues (2018) acknowledge that given the current literature, it is not possible to make claims about youth outcomes as a result of their participation in PAR. Unfortunately, literature on *Indigenous* youth engaged in participatory action research projects is even scarcer. As a result, questions remain about outcomes of Indigenous youth involved in participatory action research, including how their experiences are similar to, or different than, those of Indigenous adults or non-Indigenous youth.

CBPAR projects conducted with Indigenous youth report a range of positive outcomes for youth participants, including increased critical consciousness of systems of oppression, pride in their Indigenous identities, and confidence in their abilities to conduct research (Johnston-Goodstar & Sethi, 2013).

CHAPTER 3   METHODS

3.1 ABOUT THE RESEARCH TEAM

The first and second authors include the primary investigator (PI; Hackett) and co-investigator (Gaspar), who have been involved from project inception to completion. Two research assistants (Blinn and Moreash) assisted in completing data extraction and thematic analysis.

Both the PI and the primary co-investigator have pursued graduate degrees specializing in participatory research with Indigenous youth, although neither is of Indigenous heritage. We both have experience in developing and coordinating youth programs in First Nations communities in Canada. We were drawn to this work by way of our passion for youth empowerment and health promotion. As settler researchers who have co-created CBPAR projects with First Nations communities, we have experienced how fulfilling and productive university-community research relationships can be. We have also experienced professional and interpersonal tensions that commonly arise within intercultural research teams, and witnessed the influence of these tensions on Indigenous participants and researchers. In addition, as young academics, we feel pressured to report positive outcomes to funding agencies and academic bodies in order to be successful in a competitive field of work. However, as settler people conducting research in Canada, we have a moral and ethical responsibility to be accountable to Indigenous communities in conducting and reporting research data, including disclosing challenges and negative outcomes. We attempted to exercise this accountability by critically examining the body of CBPAR in Canada and the US, and by describing Indigenous youth's agency in decision-making. We also focused on positive and negative outcomes for Indigenous youth who participated in our research so that researchers who lead such projects, including ourselves, can learn from past work and improve practice in the field.

As a thesis for the Master in Health Promotion Degree, this scoping review was overseen by a committee composed of three faculty members at Dalhousie University who advised the PI (Hackett) throughout each stage. This committee is composed of Indigenous academics who are experienced in community-based participatory research with Indigenous communities in Canada.

3.2 PROCEDURES

A scoping review is a form of knowledge synthesis that identifies key concepts, variations, knowledge gaps, and areas for further research in a body of literature. Unlike systematic reviews that seek to answer specific questions, scoping reviews answer broad questions and enable critical appraisal. Scoping reviews are helpful for determining the range and nature of evidence in a body of literature, especially when research in the field is heterogeneous in approaches and/or emerging rapidly. These reviews may be performed in isolation, or they may be used to determine the need for a systematic review (Tricco et al., 2018). This scoping review was used to explore the range of CBPAR approaches and methods used with Indigenous youth, the extent of youth decision-making throughout the study phases, and youth outcomes and subjective experiences as research partners. The flowchart in Figure 2 provides an overview of our research methods.

In the spirit of qualitative research, methods were expanded interactively, and changes were recorded systematically, such that our protocol can be replicated. The search protocol was 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).

Critical appraisal is an optional element of scoping reviews according to some guidelines (Tricco et al., 2018), and has not been prescribed by others (Arksey & O'Malley, 2005). Scoping reviews typically provide an overview of a body of research, regardless of its methodological shortcomings. Judgements about the value of past CBPAR projects are not appropriate for, or relevant to, the current review. CBPAR approaches are difficult to compare or evaluate, as their methods vary in order to adapt to the community in which the research takes place. Furthermore, the current review focuses specifically on research partnerships with youth, and did not examine the entirety of research designs or outcomes. Therefore, while we may draw conclusions about strengths and shortcomings about relationships models, we do not make value judgements about entire designs or the meaningfulness of conclusions. Rather than appraise the success of

individual CBPAR projects, the current review applied knowledge obtained from a collection of research experiences in order to suggest effective strategies for including youth in CBPAR.

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Figure 2   Summary of scoping review methods, including opportunities to check
             effectiveness and revise approach.

3.3 SEARCH STRATEGY

A comprehensive search strategy was developed with assistance from Robin Parker, an experienced librarian at Dalhousie University, and Leah Boulos, an evidence synthesis specialist at the Maritime SPOR-Support Unit Research Services. Searches employed a combination of subject headings (MeSH terms) and pre-built filters, where available. Search terms captured three primary themes: youth, Indigenous populations, and CBPAR. The University of Alberta has developed numerous filters for literature searches involving Indigenous populations in Canada and the US state of Alaska (Campbell, n.d.; Campbell, Dorgan & Tjosvold, n.d.-b, n.d.-a). These filters were modified and supplemented with additional terms to include Indigenous peoples in the US outside of Alaska, and subsequently integrated into the search protocol. Search filters for CBPAR and youth developed for previous evidence syntheses were similarly reviewed and integrated, in part, into the complete search strategy (McElfish et al., 2018; Shamrova & Cummings, 2017).

Databases for literature search included MEDLINE (accessed via Ovid), Scopus, and PsycINFO (both accessed via EBSCO). Searching CINAHL was considered, but later rejected due to technical difficulties in the search interface and the breadth of references yielded from the other three databases. A comprehensive and refined search strategy was translated for each database's preferred syntax, and then applied on February 19, 2019. An example search string used to query PsycINFO is included in Appendix B. Analogous search strings were developed for MEDLINE and Scopus using their respective syntax. When searched, MEDLINE, Scopus and PsycINFO yielded 1741 references, which were exported as .RIS files and then imported into the evidence synthesis software, Covidence ("Covidence," n.d.).

3.3.1 Eligibility Criteria

Papers included in this review needed to be published in the year 2000 or later, and be available in English. The cut-off year of 2000 was determined by inputting draft search terms into one database, MEDLINE, filtering results to be within 10 years (i.e., 2008), and moving the year back until no new results were elicited. The search revealed that few CBPAR studies about

Indigenous youth in Canada or the US were published prior to 2000. The title and/or abstract of papers needed to indicate a focus on CBPAR, or a synonym with Indigenous youth populations in Canada or the United States of America (US). Synonyms included 'participatory action research', 'youth-engaged scholarship', and 'community-based participatory research', among others, that are detailed in the search strategy (Appendix B).

Identifying geographic and Nation-based eligibility criteria proved to be one of the more challenging decisions because Indigenous groups predate political borders drawn to demarcate the countries we know today. This review was limited to Indigenous populations in Canada and the US due to shared geography and colonial and political history (refer to section 2.1 for more information). To be included, participants in studies must have identified as Indigenous and live within the borders of Canada or the US. This included identities such as First Nations, Métis, Inuit, American Indian, Alaska Native, or Native American, among other governmental categories of Indigenous identity and identities specific to Indigenous tribes and nations. Participants did not need to be recognized as Indigenous by a federal government agency (i.e., 'Indian' status in Canada or membership in a US federally-enrolled tribe). These criteria garnered a range of Indigenous youth-focused CBPAR projects, Indigenous participants, researchers, and communities. Inclusion and exclusion criteria are summarized in Table 1.

Table 1   Final eligibility criteria for scoping review.

Inclusion Criteria	Exclusion Criteria
Published in 2000 or later	Published in 1999 or earlier
Available in English	Not available in English
Title/abstract indicates focus on PAR or comparable research method *and* Indigenous youth	Does not discuss the real extent and nature of community engagement
Indigenous youth are included in decision-making about purpose, design, analysis, or knowledge translation/action	Indigenous youth *are not* included in decision-making about purpose, design, analysis, or knowledge translation/action
Study population is based in Canada or the US	Systematic reviews

After full-text review, studies were included if they reported engaging Indigenous youth participants in making decisions about at least one of the following areas: (1) research objectives; (2) data collection strategies; (3) meaning of data; or (4) approaches to knowledge translation and action (KT/A). Furthermore, eligible studies needed to discuss the real (as opposed to intended) extent and nature of involvement of Indigenous youth research partners. Imposing these limitations prevented us from drawing conclusions about the frequency at which Indigenous youth are genuinely included or granted decision-making power in CBPAR. Performing such an analysis was beyond the scope of this review, and has been analyzed in previous reviews of CBPAR with youth - not necessarily Indigenous youth (Jacquez, Vaughn & Wagner, 2012).

3.4 STUDY SELECTION

Study screening was performed independently by Hackett and Gaspar between February and March of 2019. Screening took place in Covidence to facilitate evidence synthesis by gathering and de-duplicating studies and tracking reviewer decisions.

3.4.1 Calibrating the Approach

A calibration exercise preceded the title and abstract screening. In the calibration phase, 60 titles and abstracts were scanned by Hackett and Gasper to confirm that they were applying eligibility criteria consistently, and that search terms yielded a reasonable number of references for inclusion in a scoping review. Hackett developed a simple equation to determine how many references (out of 60) should be eligible for inclusion at the calibration phase in order to have 30 to 60 articles included in the complete scan. Hackett determined that a desired sample size was a total of 30 to 60 articles, based on her previous experience in performing scoping and rapid reviews as a research assistant for a human sexuality research lab. The equation was developed using equivalent ratios representing the sample of articles scanned during calibration ($n = 60$), and the total number of articles available for title and abstract scans ($n = 1455$). The equation showed that at least two of 60 articles should be included during calibration in order to reach a desired sample size for full text analysis in the scoping review. After the calibration exercise,

Hackett confirmed that the search strategy yielded an acceptable number of results, and that the reviewers were making consistent inclusion/exclusion decisions. If too few or too many references been included at the calibration phase, eligibility criteria would have been revised with consultation of the supervisory committee, and the calibration phase would have been repeated.

3.4.2 Title and Abstract Screening

Hackett and Gaspar each independently scanned 1455 titles and abstracts while blind to each other's inclusion/exclusion decisions, after which 187 articles were selected to assess at full text. The PI and co-investigator met on a regular basis to resolve inclusion/exclusion discrepancies and clarify eligibility criteria. Inclusion/exclusion decisions were made by consensus, and consultation with a third party was unnecessary. Rates of conflicting decisions between the reviewers were recorded manually to track consistency in decision-making, with a consensus rate of 92% at the title and abstract level. Regular discussion of conflicts and explanation and elaboration of eligibility criteria helped calibrate the scanning approach taken by the two reviewers. Most conflicts were the results of oversight; for example, one reviewer may have overlooked the fact that a study identified a research setting outside of Canada or the US. When it was unclear whether an article met eligibility criteria from reading the title and abstract, it was pushed to the full-text scan in order to make a fully-informed decision.

3.4.3 Full-Text Screening

Hackett and Gaspar independently read and assessed 187 full text articles to determine their eligibility, meeting on a regular basis to resolve conflicts and clarify eligibility criteria. Eligibility criteria were refined conservatively during the full text scan, as reviewers became more familiar with the body of literature, and encountered study designs that had not been considered in the original criteria. Need for revisions became clear when a lack of clarity in eligibility criteria resulted in conflicting inclusion/exclusion decisions. For example, the search strategy elicited a number of case studies documenting participatory development of programs. Eligibility criteria did not include definitions of what 'counted' as research, causing Gaspar and

Hackett to come to discordant inclusion decisions. In the given example, Hackett and Gaspar collectively determined that because participatory program development designs lacked conventional research characteristics (such as identification of research questions and collection of data), they should be excluded. In another case, Hackett and Gaspar decided to exclude systematic reviews because they did not constitute original research.

At the full text stage, reasons were provided for exclusion decisions. Such reasons included: (1) youth were not included in research decision-making ($n = 82$); (2) the study did not employ a CBPAR design ($n = 42$); (3) the research setting was not in Canada or the US ($n = 5$); (4) youth research partners were not Indigenous ($n = 5$); (5) the study was not available in English ($n = 1$); (6) the study was inaccessible by Dalhousie University Libraries ($n = 3$); or (7) the study was a previously undetected duplicate ($n = 6$).

To answer questions about youth decision-making in CBPAR, studies that engaged youth in participatory *methods* (such as Photovoice) were excluded, unless they reported engaging Indigenous youth participants in making decisions about one of: (1) research objectives; (2) data collection strategies; (3) deriving meaning from data (analysis); or (4) approaches to KTA. Studies that did not include youth in decision-making during these phases were excluded during the full-text scan under the justification 'youth were not included in research decision-making'. Studies that included youth in minor consulting roles were included in order to represent a spectrum of youth engagement styles in CBPAR. When both reviewers agreed that studies were not CBPAR, they were excluded whether or not they self-identified as CBPAR or not. Typically, studies excluded for this reason were ethnographies, or case studies that had participatory components, but no additional markers of CBPAR.

Papers that reflected on CBPAR projects were included if they provided sufficient detail about methods of youth engagement, or if they referred to an additional article where that information was available, in which case, the latter article was reviewed to verify it met eligibility criteria. In three instances during the full-text scan, it was unclear whether or not a study met inclusion criteria. In these cases, the corresponding author was contacted to verify details about the study. Three authors were contacted to determine whether or not the youth engaged in the project were

Indigenous. Two of the three authors responded, and one author confirmed that the majority of youth engaged as co-researchers on the project were Indigenous (Conrad, 2015); the article was included. The corresponding author for the second article confirmed that no youth research partners were Indigenous (Logie & Lys, 2015); the article was excluded. The third article (corresponding author was unreachable) was excluded because it was impossible to determine whether or not the youth research partners were Indigenous (Tuck, 2009).

It proved challenging to make consistent inclusion/exclusion decisions during the full text scan due to the diversity of research designs included for full text review. In addition, inconsistent use of participatory research terms posed a further challenge in identifying studies that met our criteria of CBPAR (see section 2.2.1). Consequently, the reviewer consensus rate dropped to 59% at the full text stage. Hackett and Gaspar collaboratively refined eligibility criteria to resolve conflicts at this stage, and agreed to include 43 articles in the final sample.

An example of a conflict at this stage is a study that self-identifies as following a Youth Participatory Action Research Framework and engages youth in participatory data-generation, such as by taking photos. One reviewer may choose to include it, but the other notices that it is unclear if youth were involved in making any choices about the research project – they were effectively research subjects only. Reviewers may disagree about whether or not this model of youth participation constituted youth participatory research and would re-read sections of the publication and discuss until they reached consensus.

3.5 DATA EXTRACTION

A data extraction chart was developed by the PI, and subsequently edited by Gaspar and the advisory committee. Feedback from the committee resulted in the clearer definitions of youth-specific information that should be extracted in each field. The data extraction form was closely monitored during the first 10 extractions to ensure it captured all relevant information. The form was modified and expanded iteratively as needs arose during the first 10 extractions. A field was added for 'identified benefits of involving youth in conducting research' when it became clear that this information was not captured in the existing form. After the initial 10 extractions, the

chart was only conservatively altered, such as to clarify field headings. The final data extraction form included 22 fields per study, four of which received a score out of three for youth inclusion. Table 2 outlines the fields included in the data extraction chart, along with scoring frameworks where relevant examples of what content may be included in each field is available in Table 2.

During extraction, Hackett read relevant articles and isolated information relevant to this review from included references and scored fields, where applicable. She grouped included articles when it was evident that they discussed the same research project. A total of ten articles were grouped in pairs (i.e., five unique studies). Additional details about the study were referenced if the article lacked information requested in the extraction form. Secondary sources were referenced and integrated in two cases. The extraction form requested authors' and research team members' Indigenous/non-Indigenous identity; however, this information was only sparsely disclosed within the articles. Hackett searched Google for the author name and affiliated institution in order to complete these fields.

Two research assistants, Gaspar and Blinn (Blinn commenced work on the review at this stage) checked extraction of each source for accuracy. They supplemented information and suggested changes to content. They identified changes by enclosing additions in asterisks or by highlighting cells, and inserted comments to note points for discussion. Hackett reviewed these changes and integrated them. When necessary, Hackett, Gaspar and Blinn met to address conflicting or unclear content, after which Hackett re-read sections of the articles to make final decisions. Nearly every addition and revision was discussed.

3.6 SCORING YOUTH DECISION-MAKING

Previous reviews of youth involvement in participatory research have found that youth involvement varied between CBPAR projects and research stages within individual projects (Jacquez, Vaughn & Wagner, 2012; Shamrova & Cummings, 2017). Therefore, studies in this review were scored for levels of youth decision-making at four research stages: (1) choosing research questions and objectives; (2) choosing research methods; (3) making decisions about the meaning of data; and (4) choosing knowledge translation and action strategies. Each stage was scored out of three, where '0' indicated no youth contribution, '1' indicated that youth were

consulted, '2' indicated that youth were central in making research decisions, and '3' indicated that youth led decisions about the research. The scoring framework was developed with input from the supervisory committee, and was based on tiers of child inclusion outlined in Hart's Ladder of Child Participation Theory (1992). The studies were scored by Hackett based on information recorded in the extraction form, and were checked by Gaspar or Blinn during the review phase of each extraction.

Table 2   Contents of final data extraction form and scoring frameworks for extraction fields
that capture details of youth inclusion in driving research processes.

	Extraction Field	Scoring Framework	Example
1	Full APA reference	-	*Doe, J. (2010). CBPAR with a group of Indigenous youth. Int J Qual Methods, 1(1), 111-121.*
2	Year	-	*2010*
3	Institutional Setting (Parent organization and/or site of ethics approval)	-	*Aybee University & This First Nation Band*
4	Peer-reviewed or dissertation	-	*Peer-reviewed*
5	Qualitative, quantitative, or mixed-methods	-	*Qualitative*

Research Question 1: *What is the scope and nature of CBPAR projects that involve Indigenous children/youth as decision-makers in terms of who was involved, when and where they took place, and the research topic?*

	Extraction Field	Scoring Framework	Example
6	Study population of Interest	-	*Indigenous youth from Northern Ontario*
7	Study Sample	-	*6 teen girls aged 12-20 from This First Nation; 6 local Elders*
8	Research Question(s)/Objective(s) of the CBPAR project (*not necessarily* the objective(s) of the article)	-	*… to understand bullying among teenaged youth attending a rural First Nations school*
9	Geographic & Cultural Setting (City & Indigenous community)	-	*This First Nation; rural reserve (pop. ~2000); Northern Ontario, Canada*
10	Community Representation in Authorship (Indicate Indigenous identities where possible)	(a) No authors are Indigenous/ no information available (b) 1+ authors are Indigenous (c) 1+ authors are Indigenous and members of the study setting (d) 1+ authors are Indigenous youth members of the study community	*(c) This First Nation Band is a named author, youth co-researchers are not. First author is Indigenous, Inuit (not from study community).*

Table 2   *Continued.*

	Extraction Field	Scoring Framework	Example
	Research Question 1 (cont.)		
11	Community Representation in Research Team	(a) No locals are co-researchers/ not described (b) 1+ community are co-researchers (c) 1+ community youth are co-researchers (d) 1+ community youth are co-researchers and are named authors	*(c) 6 local youth are co-researchers*

Research Question 2: *What is the nature and extent of youth engagement in CBPAR projects in relation to project objectives, research questions, methods, and/or knowledge translation and action strategies?*

12	Youth Engagement During Data Collection	-	*Youth co-researchers conducted interviews with an academic researcher present for support, if needed. Debriefed with entire research team after each interview via talking circle with snacks.*
13	Methods Summary	-	*- PAR; This is Our Community Project* *- Recruited via word-of-mouth and Band announcement* *- Interview, talking circles* *- KT: community gathering, academic presentations, youth research club at school*
14	Method of Youth Engagement	-	*6 youth are co-researchers; recruited following approval of project aims and methods by Band Council. Band Council youth representative was included in discussions to refine research objectives and youth engagement strategy.*
15	Benefits of Including Youth as Research Partners (to research project)	-	*Youth developed interview questions relevant to the local context that the outsider researchers wouldn't have thought of.*

Table 2   *Continued.*

	Extraction Field	Scoring Framework	Example

Research Question 3 (Extraction Field #16, 17, 18, 19): *To what extent are Indigenous youth engaged in decision-making around research objectives, questions, methods, and/or knowledge translation and action strategies?*

	Extraction Field	Scoring Framework	Example
16	Youth Engagement in Choosing Research Objectives/Questions	(0a) Not described (0b) Youth are not involved (0c) Youth are not involved, but community adults are (1) Community youth **consulted** after draft research objectives/questions developed – youth input could *slightly* change objectives/questions (2) Community youth **central** in the decisions about research questions (3) Community youth **central in both** decisions about research questions and overall objectives	*(1) One youth on Band Council contributed to shaping aims and questions. 6 youth co-researchers did not contribute to this phase.*
17	Youth Engagement in Choosing Data Collection Methods	(0a) Not described (0b) Youth not involved (0c) Youth not involved, but community adults were (1) Community youth **consulted** after draft methods and measures were chosen/ developed – youth input could *slightly* change methods (2) Community youth **central** in decisions/choices made in relation to research methods and measures (3) Community youth **led** decisions about research methods and measures for data collection	*(2) Methods chosen by research team and approved by Band Council. Youth co-researchers developed interview questions and interviewing style (chose an unstructured interview). Youth co-researchers also selected Elders they wanted to interview.*

Table 2   *Continued.*

	Extraction Field	Scoring Framework	Example
	Research Question 2 (cont.)		
18	Youth Decision-making in Analysis (meaning-making)	(0a) Not described (0b) Youth not involved (0c) Youth not involved, but community adults were (1) Youth **consulted** after draft analyses/conclusions made (including CAB) (2) Youth were **central** in making decisions about the meaning of data (3) Youth **led** decisions about the meaning of data	*(2) Discussions with youth after interviews inspired the development of initial themes that academic researchers later used to guide thematic analysis.*
19	Youth Decision-making about Knowledge Translation and Action (KT/A)	(0a) Not described (0b) Youth not involved (0c) Youth not involved, but community adults were (1) Youth **consulted** about KT/A strategies and/or content (2) Youth **central** in making decisions about KT/A strategies and/or content (3) Youth **led** decisions about KT/A strategies and content	*(2) Community gathering to share findings. Youth co-researchers decided where the gathering would be held, when and how to invite the community, and what the presentation should look like. Youth co-researchers chose to start a youth research club at their school.*
	Research Question 3 (Extraction Field #20): *How do youth feel about being involved as research partners and decision-makers in CBPAR; What personal outcomes transpiredas a result of their participation?*		
20	3a: Did the study assess/ describe the experiences and/or outcomes of youth participation in the CBPAR project? (in addition to answering the questions of the actual CBPAR project) 3b: What were the risks and benefits for youth research partners? (not scored; analyzed qualitatively)	(0) No outcomes described (1) Anecdotal observations (2) Superficial assessment (i.e., satisfaction survey) (3) Systematic assessment	*(3) Pre-research and post-research surveys assessing youth confidence, sense of belonging, and other factors. Subject experiences noted during debriefs and used to supplement survey data. Youth felt included in the research team and more confident reaching out to Elders in the community after participating in the project.*

Table 2   *Continued.*

	Extraction Field	Scoring Framework	Example
	Research Question 5 (Extraction Field #20 – 21): *Challenges and facilitators for engaging youth as research partners and decision-makers in CBPAR*		
21	Identified Challenges for Effective Youth Engagement and decision-making	-	*Busy youth schedules with family commitments and community events meant that their attendance was not consistent.*
22	Identified Facilitators for Effective Youth Engagement and decision-making	-	*Familiar and consistent meeting space and sharing of food helped youth feel comfortable during debriefs, more open to discussing challenges, and supportive of one another.*

3.7 ANALYSIS

3.7.1 Quantitative Analysis

Research Question 3 was answered exclusively using quantitative analysis. All scores were recorded in the extraction form, and then exported into a SPSS Statistics data editor program. Each study was scored on youth decision-making, which included decision-making about objectives, methods, analysis, and KT/A. Each decision-making phase was scored out of three; whereas the total decision-making scores were out of 12. Scores at individual stages and distribution of total scores were analyzed and graphed.

Youth decision-making before data collection was divided into two components: research objectives/questions and methods. Each component of decision-making before research was scored on a scale from zero to three. Scores identified projects with no youth opinions sought about objectives, questions or methods (i.e., a score of zero in both fields) to those where youth decided what research would explore, what questions to ask, and what tools to use to answer those questions (i.e., a score of 3 in both fields).

Frequency of data collection methods were counted manually. Other logistical study elements, including country, research design, urban/rural setting, and general research topic, were given categorical codes, which were inputted into SPSS and analyzed for relative frequencies. Categorical codes were also graphed with year of publication and overall youth-inclusion scores in order to identify relationships and trends.

3.7.2   Qualitative Analysis

Qualitative analysis was used to answer questions in relation to youth outcomes (Research Question 4) and barriers and facilitators to youth engagement (Research Question 5) in CBPAR projects. Hackett re-read all data in the extraction form and edited the content for spelling, clarity and brevity. All scores were re-tallied to ensure accuracy. Throughout this exercise, Hackett became increasingly familiar with the studies included in the sample. At this point, she had returned to each study four to five times. Words and fragments that could be of thematic importance were bolded, after which a list of preliminary codes was generated.

Once all data had been reviewed independently by Hackett, she met with a research assistant (Moreash) to develop and apply a comprehensive coding framework. Moreash reviewed the extraction form and met with Hackett on one occasion before beginning coding. Over two 4-hour sessions, Hackett and Moreash collaboratively developed thematic codes for research questions 1, 3 and 4, and applied them to the extracted data. Codes were developed inductively from Hackett's pre-made list of possible themes, and by jointly reading data and discussing items of thematic importance. When Hackett and Moreash disagreed over a suitable code, they discussed their positions until they came to an agreement.

Codes were organized into four categories:
> **Questions 2 & 3.** Youth engagement approaches employed;
> **Question 4.** Youth benefits from being engaged in research decision-making;
> **Question 5.1.** Facilitator of effective youth engagement;
> **Question 5.2.** Barriers to effective youth engagement;

Codes were recorded in the extraction chart, as well as on sticky notes that were colour-coded for each category, which were adhered to two poster boards. Hackett and Moreash continued to read

data in order to create, rearrange and remove code notes until the coding framework could be consistently applied to data without requiring further revisions. They also identified relationships between codes and recorded quotes that best captured the meaning of major themes and codes. When Hackett and Moreash were satisfied that the coding framework captured data in one extraction field, they repeated the process for the remaining extraction fields.

Due to time constraints, when extraction fields relevant to research questions 1, 3 and 4 had been used to develop codes, Hackett completed coding data independently in a deductive manner. While coding independently, Hackett made conservative amendments to the coding framework. Dominant themes became more evident throughout the repetitive process, especially as she became more familiar with most commonly-used codes. Next, she reviewed data that was coded during development of the framework and ensured it the most recent and complete coding framework had been applied. At this time, she noted redundancies and reproduced the framework in digital format (refer to Appendix C for complete frameworks)). When all studies had been coded in the extraction form, Hackett withdrew a list of codes used for each study, which was reviewed for errors and duplicates. Coding frameworks were printed, and incidents of individual codes were tallied on the framework to illustrate dominant patterns. The resulting patterns guided identification of major themes.

Recording and coding outcomes. Research Question 3 considered subjective outcomes experienced by youth partners in CBPAR. Particular attention was paid to details about youth research partners' subjective experiences of CBPAR processes (perceived enjoyment/value), as well as perceived outcomes, including changes in knowledge, attitudes, behaviour or holistic well-being. In order to represent youth co-researcher's experiences as accurately as possible, extractions maintained wording choices used in articles, and codes were almost exclusively applied to subjective statements made by the youth themselves, or to objective findings from assessments of youth experiences/outcomes. Hackett and Moreash collectively considered each statement about subjective experiences, and disregarded statements if they were deemed to be speculative on the part of non-youth authors.

CHAPTER 4   RESULTS

The screening process yielded 43 articles that underwent extraction. Two additional articles were added during extraction (Fast et al., 2017; Gérin-Lajoie et al., 2018), where included studies omitted information and referred the reader to other publications for further detail (Blangy et al, 2018; Fast, 2014). In total, 45 articles belonging to 38 unique studies were extracted. Each stage of the literature scan was recorded by Hackett, both in Covidence and in hand-written notes. All evidence sources were identified, screened, excluded, and included, as summarized as a flow diagram in Figure 3, consistent with PRISMA's requirements (Tricco et al., 2018).
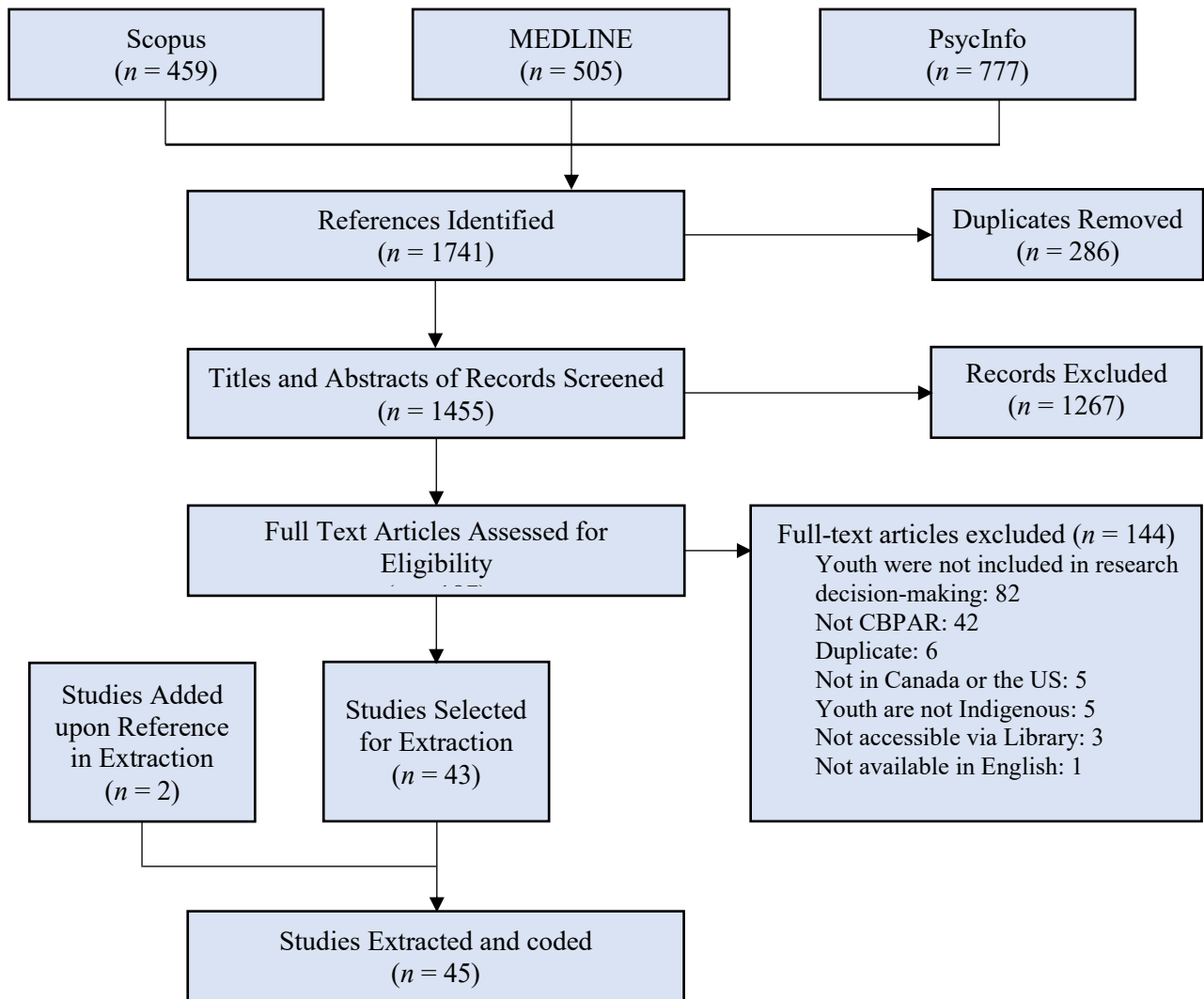
Figure 3   PRISMA flow chart, modified from Tricco and colleagues, 2018.

A summary of study characteristics is presented in Table 3 (the full data extraction form is available upon request). During data extraction, references were grouped by the study to which they referred. Seven of 38 studies were described in two articles. With this in mind, studies are presented in alphabetical order, according to the study title, which was often chosen by youth engaged in CBPAR. Referring to studies by title rather than by the lead author's name, is a nod to the youth-adult collaboratives involved.

Table 3   Study summaries organized alphabetically by study title. When study titles were not identified, the article title, the name of a knowledge translation initiative in the project(*), or a name developed from stated project purpose (**) was used.

Study Title	Author(s)	Year	Research Purpose	Method of Youth Engagement	Primary Data Collection Method(s)
Assessing Tribal Youth Physical Activity and Programming Using a Community-based Participatory Research Approach	Perry & Hoffman	2010	… to understand tribal youths' current patterns of physical activity behaviour, and their beliefs and preferences about physical activity	Youth consul-tation & youth representation on community advisory board	Survey & focus groups
Anishnabe Youth Perceptions about Community Health**	Big-Canoe & Richmond	2014	… to explore Anishnabe youth perceptions about health, relationships, and how they affect contemporary Anishnabe ways of life	1 youth co-researcher	Interviews
Beyond Two Worlds: Identity Narratives and the Aspirational Futures of Alaska Youth	Trout, Wexler & Moses	2018	… to explore how culture and identity narratives are fashioned by young people and their Elders	11 local youth co-researchers and 6 non-local, non-Indigenous youth co-researchers	Interviews; participatory photography; & participatory video
	Weinronk et al.	2018			
Circumpolar Indigenous Pathways to Adulthood (CIPA): Southwest Alaska	Ford, Rasmus & Allen	2012	… to involve young people in health promotion and prevention strategizing as a part of translational science at the community level	Youth co-researchers (unspecified number), youth representation on community advisory board & youth-action groups	Interviews

Table 3　　*Continued.*

Study Title	Author(s)	Year	Research Purpose	Method of Youth Engagement	Primary Data Collection Method(s)
Circumpolar Indigenous Pathways to Adulthood (CIPA): Northwest Alaska	Wexler et al.	2013	… to show how culture is maintained and recreated by Inupiaq young people as they navigate the difficulties of growing up	Youth representation on community advisory board	Interviews
Early Authors Program	Coulthard	2018	… to observe the impacts of the Identity Texts program on preschool children and families attending a preschool from First Nations, Métis, and Inuit children	19 youth co-researchers	Participatory photography & participatory art-making
Employing a Harm-reduction Approach Between Women and Girls within Indigenous Familial Relationships**	Cooper, Driedger & Lavoie	2018	… to understand what First Nations and Metis women and girls identify as essential features to ensure their ongoing safety and well-being	36 youth engaged in participatory methods	Participatory art-making
Food Traditions… Passed Down to Us*	Genuis et al.	2015a	… to examine the food-related experiences of elementary schoolchildren in the community	9 youth co-researchers	Participatory photography & interviews
	Genuis et al.	2015b			
Giving Voice to First Nations Youth Leadership	Lickers	2017	… to learn how Indigenous traditional leadership knowledge is passed on to youth	Youth consultation	Interviews
HIV Testing Experiences of Aboriginal Youth in Canada	Worthington et al.	2010	… to explore HIV testing experiences and service views of Canadian Aboriginal Youth	Youth representation on community advisory board	Survey
IMALIRIJIIT: Those Who Study Water	Blangy et al.	2018	… to establish a long-term environmental monitoring program in a local watershed	19 student interns	Qualitative observations & quantitative tests of watershed
	Gérin-Lajoie et al.	2018			

Table 3   *Continued.*

Study Title	Author(s)	Year	Research Purpose	Method of Youth Engagement	Primary Data Collection Method(s)
Incorporating Diverse Understandings of Indigenous Identity	Fast et al. Fast	2017 2014	… to explore the role of culture in the lives of Indigenous youth living in Montreal	Youth-specific community advisory board	Interviews
Indigenous Planning and Pattern Language Theory**	Pollari	2018	… to develop a detailed spatial model for settlements within Navajo lands	8 students engaged in participatory methods	Participatory art-making; surveys; & free-listing
Keepin' it REAL Program Adaptation**	Jumper-Reeves et al.	2014	… to understand why the Keepin' it REAL curriculum proved less effective for American Indian students	Youth consultation	Focus groups & survey
Lakota Elders' Views on Traditional Versus Commercial/ Addictive Tobacco Use	Margalit et al.	2013	… to discern Lakota Elders' distinctions between traditional and addictive commercial tobacco	Youth co-researchers (unspecified number)	Interviews
Life in Rigolet*	MacDonald et al.	2015	… to explore how participatory video can support known facilitators of youth resilience to a variety of stresses, including the impact of climate change	7 youth engaged in participatory methods	Participatory video & interviews
Lumbee Rite of Passage Study	Langdon et al.	2016	… to develop and implement a suicide prevention program for Lumbee youth	Youth representation on community advisory board	Focus groups & interviews
Melq'ilwiye: Coming Together	Clark et al.	2013	… to identify cultural components that are linked to the health needs of urban Aboriginal youth	2 youth co-researchers & youth representation on community advisory board	Talking circles & surveys
Native Teen Voices	Garwick et al.	2008	… to identify pregnancy prevention strategies from the perspectives of both male and female urban Native youth	3 youth consultants	Focus groups

Table 3   *Continued.*

Study Title	Author(s)	Year	Research Purpose	Method of Youth Engagement	Primary Data Collection Method(s)
Nuvuk Archaeology Project	Jensen	2012	… to relocate remains of ancestors from eroding ground to a safer location and gather information about the past from their gravesites	Student interns	Field work
Perspectives of Water and Health**	Bradford, Zagozewski & Bharadwaj	2017	… to explore youth perspectives, values, and knowledge about water in their community	19 youth engaged in participatory methods	Participatory photography; participatory art-making; & sharing circles
PICTURE THIS: Native Youth Look at Their Environment	Johnston GoodStar	2010	… to engage you in an examination of environmental justice through an Indigenous lens	7-9 students engaged in participatory methods	Interviews; talking circles; & participatory photography
Prevention and Preservation Project	Fletcher & Mullett	2016	… to facilitate intergenerational knowledge sharing for healthy lifestyles	Youth co-researchers (unspecified number)	Participatory video
Right to a Healthy City	Skinner & Masuda	2013	… to develop spatial understandings of health equity in an urban setting	8 youth co-researchers and youth-specific community advisory board	Community mapping; focus groups; participatory art-making; & journal entries
Spaces and Places Project	Liebenberg et al.	2017	… to explore what spaces are available to Indigenous youths in their communities that establish a sense of belonging and connection to culture	8 youth co-researchers	Participatory photography; participatory video; & interviews
	Reich et al.	2017			
"Sport is community:" An Exploration of Urban Aboriginal Peoples' Meanings of Community Within the Context of Sport	McHugh et al.	2015	… to better understand the meanings of community for urban Aboriginal youth and adults in Edmonton, Alberta	Youth were consulted & 18 youth engaged in participatory methods	Participatory photography & interviews

Table 3   *Continued.*

Title	Author(s)	Year	Research Purpose	Method of Youth Engagement	Primary Data Collection Method(s)
Structural and Cultural Factors in Suicide Prevention**	Morris	2016	… to generate new knowledge about how Inuit youth understand high rates of violence in their communities and ways of coping	Youth representation on community advisory board & youth consultation	Survey & focus groups
The Role of Families in Youth Sport	Schinke et al.	2010	… to identify ways to encourage youth participation in Wikwemikong's sport programs	1 youth co-researcher	Talking circles
Traditional Pathways to Health Project	Riecken et al.	2005	… to facilitate Indigenous student investigation of topics that they perceive to be of importance for the promotion of healthy living and injury prevention	2 high school classes of youth co-researchers	Participatory video & interviews
	Stewart et al.	2008			
Tribal Recommendations for Designing Culturally-appropriate Technology-based Sexual Health Interventions	Craig Rushing & Stephens	2012	… to review existing technology-based interventions and generate recommendations for designing interventions that reflect the culture, needs and capacities of Native youth	Youth were consulted	Literature review & survey
Understanding the Healthy Body from the Perspective of First Nations Girls	Shea et al.	2013	… to understand how First Nations girls interpret the healthy body and body image	20 youth engaged in participatory methods	Participatory art-making; participatory photography; interviews; & sharing circles
Urban Indian Voices: A Community-based Participatory Research Health and Needs Assessment	Johnson et al.	2010	… to identify urban American Indian strengths and needs to inform a comprehensive service system model for the community	8 youth co-researchers & youth rep-representation on community advisory board	Survey

Table 3   *Continued.*

Study Title	Author(s)	Year	Research Purpose	Method of Youth Engagement	Primary Data Collection Method(s)
We are Given a Body to Walk This Earth: The Body Pride Experiences of Youth Aboriginal Men and Women	Coppola et al.	2017	… to explore the bodypride experiences of young Aboriginal men and women health	8 youth engaged in participatory methods	Interviews & participatory photography
What Makes Life Good	Lopez et al.	2012	… to co-develop a conceptual model and measure of quality of life that reflects the experiences of Alaska Native college students' health	Youth included in project planning meetings	Focus groups & questionnaires
	Sharma et al.	2013			
Wind River UNITY Photovoice for Healthy Relationships	Markus	2012	… for American Indian youth to learn about the role of healthy relationships in the prevention of HIV, STIs and unintended pregnancy health	6 youth co-researchers	Participatory photography
Youth Resilience Project	Bird-Naytowhow et al.	2017	… to discover sources of resilience and positive health strategies for Indigenous youth in urban Canadian contexts health	32 youth co-researchers and youth representation on community advisory board	Participatory photography & talking circles
Youth Uncensored	Conrad	2015	… to educate social service providers working with youth about youth's lived experiences program development	50 youth co-researchers	Participatory theatre-production
Youth Voices on Tobacco*	Jardine & James	2012	… to explore youth understandings of tobacco use and contributors to the decision to/not to smoke health	10 youth co-researchers	Interviews & participatory photography

4.1 OVERVIEW OF CBPAR PROJECTS WITH INDIGENOUS YOUTH

Research Question 1 focused on the scope and nature of Indigenous youth engagement in CBPAR. The sample included a diverse array of CBPAR projects that engaged Indigenous youth across Canada and the US, in which youth contributed at various levels to decision-making and execution of research processes.

4.1.1 Year of Publication and Location

Articles were published between 2005 and 2018, with more than 50% of studies having been published in 2014 or later. Study locations were widely distributed across Canada and the US, with over 60% in Canada and just under 40% in the US. Geographic spread is visualized on the left map in Figure 4.
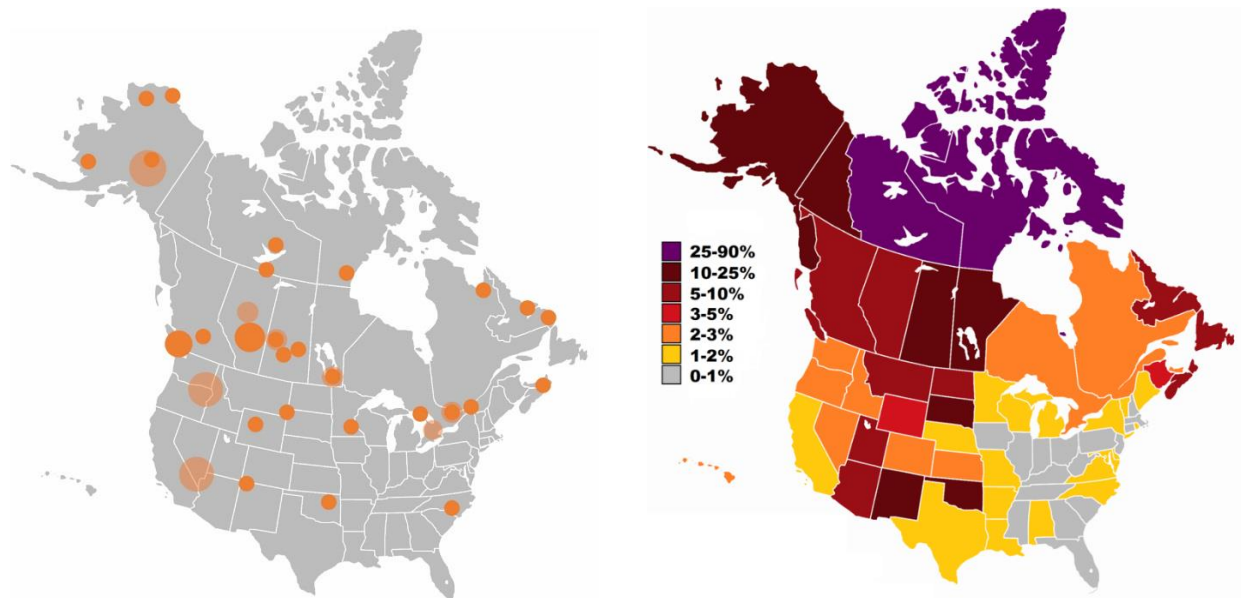
Figure 4   Left map illustrates geographic distribution of included studies across Canada and the US. Numbered circles represent specified study location; unnumbered circles represent broadly-indicated study locations. Right map illustrates distribution of Indigenous populations across Canada and the United States according to data obtained from 2016 and 2010 censuses, respectively. Colour coding represents percent of population reporting Indigenous ancestry. Rightmap was produced by Wikipedia user, Domen, on October 21, 2018.

Study distribution generally matched that of Indigenous peoples in Canada and the US, according to census data obtained in 2016 and 2010, respectively (Figure 4; Norris, Vines &

Hoeffel, 2012; Statistics Canada, 2018). Larger clusters of studies are seen in Western Canada and Alaska. Studies took place in every Canadian province and territory, except Yukon, New Brunswick and Prince Edward Island. Only one study was conducted in the Southeast US, which aligns with the census distribution of Indigenous people in America in 2010, as illustrated in the right map in Figure 4. Studies were fairly evenly distributed between urban ($n = 18$) and rural ($n = 14$) settings. A smaller subset can be seen in both urban and rural settings ($n = 6$); one study did not disclose the exact location or urban/rural setting.

4.1.2 Research Objectives and Types of Data Collected

Study topics varied extensively, from environmental analysis to traditional understandings of tobacco. Many studies were cross-disciplinary and had multi-pronged objectives, in which case they were catalogued according to the most dominant research interest. Most studies were classified within a social sciences domain, investigating topics of health ($n = 18$), culture ($n = 8$), environment ($n = 6$), and program development ($n = 6$).

The majority of studies had qualitative designs ($n = 27$), followed by mixed-methods ($n = 10$), and a single quantitative design ($n = 1$). Studies employed a diverse set of data collection strategies and often integrated multiple methods to assist triangulation of data (1 method [$n = 15$]; 2 methods [$n = 16$]; 3 methods [$n = 5$]; 4 methods [$n = 2$]). Data collection strategies included: interviews ($n = 17$); focus groups or talking circles ($n = 13$); surveys ($n = 9$); participatory photography ($n = 12$); non-digital participatory art-making ($n = 7$); participatory video ($n = 5$); various biophysical environmental tests ($n = 2$); and other named methods ($n = 4$), which included free-listing, community-mapping, journaling, and a participatory literature review. Three of 38 studies did not engage in research with human subjects. Two of these studies employed biophysical environmental tests and included an excavation of an eroding grave site (Jensen, 2012) and an environmental monitoring program for a local watershed (Blangy et al., 2018; Gérin-Lajoie, 2018). The third study examined community planning models in Navajo Nation (Pollari, 2018). The remaining studies identified human populations of research interest. Aside from one study examining perspectives of Lakota elders (Margalit et al., 2013), all populations of interest included Indigenous youth.

4.1.3 Styles and Approaches to Youth Engagement

In accordance with the review's eligibility criteria, all included studies engaged youth in decision-making at least once during the research. Styles and approaches to youth engagement described in these studies include: consultation ($n = 8$); engagement in participatory data collection methods ($n = 7$); membership on a Community Advisory Board ($n = 11$); membership on the research team ($n = 18$); and simultaneous inclusion in the research team and the participant sample ($n = 2$). Oftentimes, youth engagement took multiple forms - hence, the total recorded means of youth engagement ($n = 46$) is more than the total number of studies ($n = 38$).

For the purpose of this review, consultation was defined as youth input before or after research decisions were made that may result in *minor* modifications to the research approach. Engagement in participatory methods refers to youth inclusion as research subjects, who, as a part of data collection methods, contribute to decisions about what data is collected and/or the meaning of data. For example, in the *Understanding the Healthy Body* project, participants chose where to take photos, as well as the content of those photos. Participants described their favourite photos, and these descriptions guided initial thematic analysis. Later, participants discussed and elaborated on themes that emerged in sharing circles (Shea, Poudrier, Thomas, Jeffery & Kiskotagan, 2013). Community Advisory Boards (CABs), also referred to as local steering committees and similar terms, were formalized groups of community representatives who convened to make decisions about research or approve proposed research plans/results. Youth who were included on research teams, often called youth co-researchers, were most actively included in decision-making. Youth co-researchers made choices about research at most, if not all, stages. In some cases, youth co-researchers took on more of a role of research assistants or interns rather than as decision-makers. This was noted and will be discussed in more detail in the following chapters.

Youth engagement strategies for each study are delineated in Table 3. In all cases, youth engaged in CBPAR projects were entirely or majority Indigenous. In one case, the study engaged a team of youth co-researchers from the study community, along with a second team of non-Indigenous

youth co-researchers visiting from American universities (Trout, Wexler & Moses, 2018; Weinronk et al., 2018). In this case, only information relevant to the local youth co-researcher team was extracted.

4.1.4 Authorship

Many studies disclosed the cultural identities of the lead authors, especially when they were Indigenous or local to the study setting. Youth co-researchers were named individually or collectively as co-authors in six cases (represented in orange in Figure 5). Slightly more frequently, named authors included the name of the Indigenous Nation/Band/Tribe or adults from the community (green) or authors identified with Indigenous ancestry outside of the study setting (red). More than 40% of studies did not include any Indigenous individuals as authors (blue). When cultural identity was not disclosed, the author's name was searched on Google with their affiliated institution in the publication. If the search revealed researcher biographies, these were scanned to confirm identity. In 11 cases, it was impossible to determine whether any listed authors were Indigenous. These cases were recorded as 'no Indigenous representation' (blue).
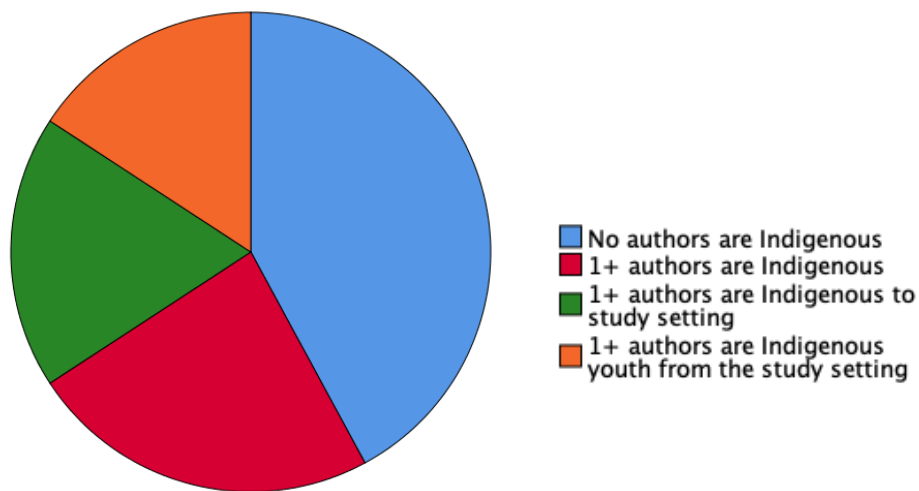
Figure 5   Pie chart illustrating representation of Indigenous, local Indigenous and
            Indigenous youth among named authors in the sample.

4.2   Youth Engagement and Decision-making

To answer Questions 2 and 3, each study was scored for Indigenous youth decision-making throughout the CBPAR process. Scores were assigned for influence over research objectives/question, data collection methods, meaning-making (i.e., analysis), and knowledge translation and action (KT/A) strategies. Overall youth decision-making scores were calculated for each study by tallying all four individual decision-making scores. The distribution of overall decision-making scores is visualized in Figure 6. Overall decision-making scores ranged between 1 and 10, with a mean of 4.2 ($SD = 2.3$) out of a possible 12 points. Scores were normally distributed, and confirmed by a non-significant Kolmogorov-Smirnov value of 0.12 ($p = 0.19$). Normal distribution of scores indicates that the majority of studies received middle-range youth inclusion scores, with fewer studies receiving either very low or very high scores.
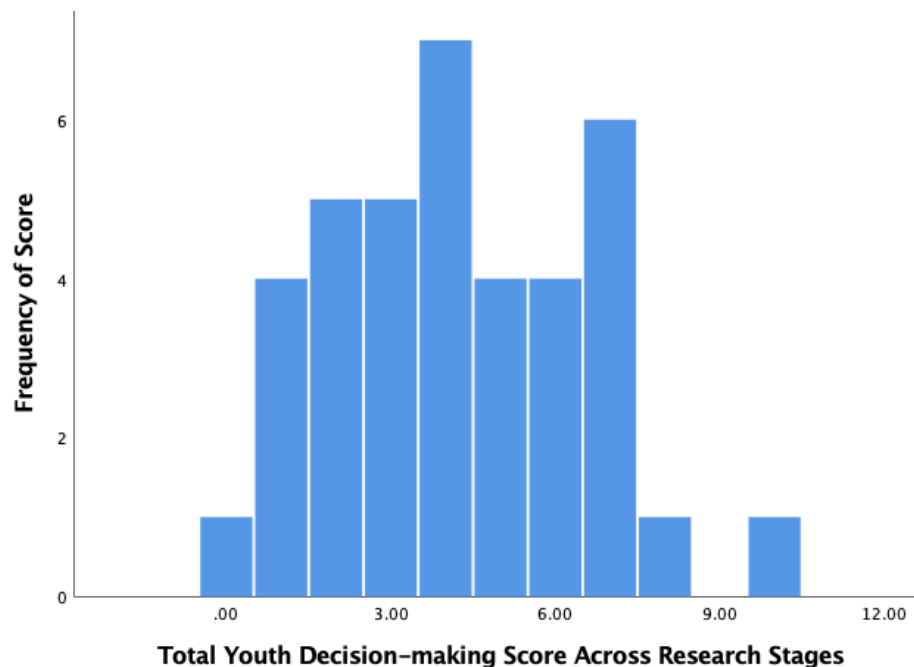
Figure 6   Histogram illustrating frequency distribution of overall youth decision-making scores among studies included in the sample. Scores ranged from 1 to 10, and the maximum possible score was 12.

Mean scores were calculated for youth decision-making at each decision-making stage of research. Mean youth decision-making scores were highest during meaning-making ($M = 1.32$; $SD = 1.14$), followed by choosing methods ($M = 1.21$; $SD = 1.12$), and choosing KTA strategies

(*M* = 1.05; *SD* = 1.23); scores were lowest for choosing research objectives and questions (*M* = 0.66; *SD* = 0.97). Variation in youth decision-making scores across the various stages are outlined in Figure 7.
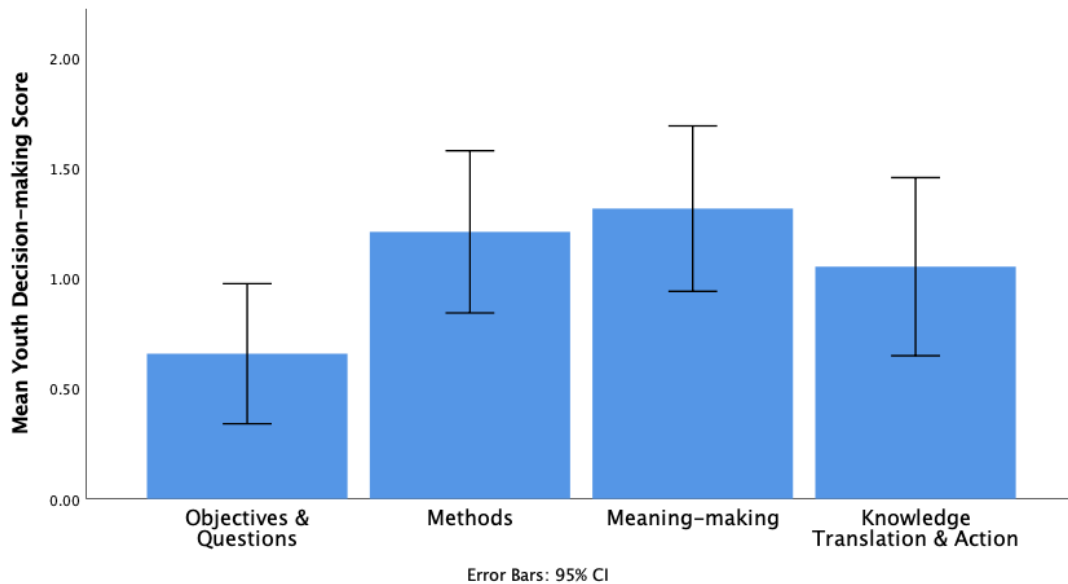
Figure 7   Histogram illustrating mean youth decision-making scores across CBPAR stages. Each stage was scored out of three. Error bars were created using 95% confidence intervals.

4.2.1   Youth Engagement before Data Collection

Youth were rarely involved in choosing research objectives or questions (*n* = 3; Table 7). Only slightly more frequently did they choose questions, but not overall research objectives (*n* = 4). Scenarios in which youth choose research questions that related to a pre-determined set of objectives represented a compromise in honouring youth-decision-making. For example, in the *Traditional Pathways to Health* project, youth research partners were engaged only after the overall research interest of injury prevention had been identified. The objectives concerning injury prevention were non-negotiable, as they were integral to the sponsoring research agency and project funding. However, each youth partner pursued questions related to injury prevention that were of interest to themselves. They conducted interviews and created videos as a means of answering their questions.

The current review focused on youth-involvement in decisions. We did, however, note that although youth were rarely included in choices about research objectives, community representatives often were. In fact, nine projects indicated that although research objectives were not youth-defined, they were defined by community adults either independently, or in collaboration with university partners.

Youth were more commonly included in choosing or refining methods of inquiry. Refining methods included projects in which methods were pre-determined, but youth partners played a large role in deciding how those methods were performed, including developing tools such as focus group protocols, survey items, and choosing on the interviewer; these scenarios were scored a two ($n = 10$; Table 4). Slightly less frequently, youth partners were responsible for choosing methods of data collection that they thought to be most suitable ($n = 6$). In these cases, they also contributed to developing methods and measures. These two forms of decision-making (refining and choosing) were at times difficult to discern, but after conversation with the supervisory committee, the PI deemed it necessary due to clear variation in youth-agency in the two approaches.

Table 4 Frequency of scores (0, 1, 2, 3) for youth decision-making about research objectives and questions, and research methods. Examples are provided to illustrate scenarios that would receive the indicated score.

| Score | Choosing Objectives & Questions | | Choosing Methods | |
	Frequency of score	Example	Frequency of score	Example
0	23	University partners (and possibly community adults) chose objectives and questions before engaging youth as research partners	14	University partners (and possibly community adults) chose methods before engaging youth as research partners
1	8	University partners (and possibly community adults) chose objectives and questions, and then sought feedback from youth research partners, which may have resulted in slight modifications	8	University partners (and possibly community adults) chose methods and then sought feedback from youth research partners, which may have resulted in slight modifications
2	4	Research objectives were pre-determined (i.e., harm reduction) but youth chose questions within this focus to explore (i.e., how does family support help recover from addiction?)	10	Youth research partners helped develop pre-determined research methods (i.e., chose questions to include in an interview protocol)
3	3	Youth research partners helped make decisions about the overall objectives of research, and specific questions	6	Youth research partners were integral in choosing research methods (i.e., deciding on focus groups and videos), possibly with adult insight/support

4.2.2 Youth Engagement during Analysis

Youth were frequently engaged in making decisions about the meaning of data during analysis. Publications described creative activities to facilitate youth discussion of data and identification of themes. Statistics showed that it was uncommon for youth partners to be wholly included in making decisions about data meaning (n =2; Table 5). For example, in the *Melq'ilwiye* project, two youth co-researchers were trained in research methods and collaborated with university

researchers, other community representatives, and a local Elder to analyze data (Clark et al., 2013). Many studies included youth research partners (YRPs - which includes all youth engaged in CBPAR who exert some level of decision-making power) in identifying preliminary themes and verifying coding frameworks. Such models of youth contributions to meaning-making scored a two ($n = 8$). For example, in *Food Traditions Passed Down to Us,* high school-aged youth co-researchers were trained to conduct Photovoice methods with elementary school-aged children in their community (Genuis, Willows, Alexander First Nation, & Jardine, 2015a; Genuis, Willows, Alexander First Nation, & Jardine, 2015b). Youth co-researchers explained Photovoice to the elementary-aged participants, after which pairs of youth co-researchers led interviews about photos with pairs of participants. After every Photovoice interview, university researchers and youth co-researchers debriefed about the experience of leading an interview, ideas that came forward from participants, and emerging themes. University research partners used youth co-researchers' suggestions to develop the final code book, and validated final food-related themes with youth co-researchers.

Studies that employed Photovoice often scored a one or two for youth decision-making during analysis. Photovoice is a participatory-photography process that assists individuals in identifying and recording community issues by taking photos, which are then used to facilitate dialogue for social change (Castleden et al., 2008). Photovoice is popular when working with marginalized communities because providing a camera to individuals who may not otherwise have access to such a device can empower them to record local issues and instigate change. Photovoice studies followed a general format of: (1) youth are introduced to the project participants/research partners, and provided with training on photography techniques; (2) youth take photos about a given research question; (3) youth receive their photos and select a few to discuss; (4) photos are used to elicit discussion about the research question among youth in an interview or focus group setting. In many designs, data collection, analysis and KT/A phases were fluid rather than distinct. In the case of most Photovoice studies, youth collected data by taking photos and using their photos to generate discussion, which served as both data generation and analysis. Photos were later used in KT/A strategies via media such as photobooks or photo galleries.

Table 5   Frequency of scores (0, 1, 2, 3) for youth decision-making about the meaning of
               data during analysis. Examples are provided to illustrate scenarios that would
               receive the indicated score.

Score	Frequency of score	Example
0	12	University partners (and possibly community adults) performed analysis of data independently
1	10	University partners (and possibly community adults) integrated youths' ideas and perspectives in their data analysis
2	8	Youths' views of the research questions and data served as a basis for analysis.
3	2	Youth led decisions about the meaning of data in analysis processes.

4.2.3 Youth Engagement Before and During Knowledge Translation and Action

Included studies described wide-ranging and creative KT/A strategies that were either chosen or developed with youth partners. Studies were divided almost equally between no youth decision-making about KT/A, and minor to extensive youth direction (Table 6). One of the most comprehensive models of youth decision-making in KT/A was at the Southwest Alaska site of the *Circumpolar Indigenous Pathways to Adulthood (CIPA)* project, which formed 'youth action and translation groups' who were responsible for selecting and driving dissemination of research findings (Ford, Rasmus & Allen, 2012). Another project published an article that was entirely devoted to discussing meaningful dissemination with youth, in which they describe extensive youth-chosen and youth-developed KT/A initiatives (Reich et al., 2017).

YRPs often presented findings at large academic and community conferences (Bird-Naytowhow et al., 2017; Blangy et al., 2018; Clark et al., 2013; Genuis et al., 2015a; Genuis et al., 2015b; Gérin-Lajoie et al., 2018; Jensen, 2012; Markus, 2012; Riecken, Strong-Wilson, Conibear, Michel & Riecken, 2005; Stewart, Riecken, Scott, Tanaka, & Riecken, 2008). Youth shared their experiences and findings via media outlets (Bird-Naytowhow et al., 2017; Johnston Goodstar, 2009). When projects employed arts-based data generation techniques, the products of

data generation were integrated in knowledge translation and action (KT/A). Photovoice studies shared youth-generated photos in photobooks (Genuis et al., 2015a; Genuis et al., 2015b; Jardine & James, 2012) and galleries (Bird-Naytowhow et al., 2017; Fast, 2014; Fast, Drouin-Gagné, Bertrand, Bertrand & Allouche, 2017; Johnston Goodstar, 2009). In one case, each YRP developed a personal arts project as contribution to and reflection on the study topic. However, it was unclear whether these projects were used to translate research findings (Skinner & Masuda, 2013). Authors noted instances where YRPs supplemented predetermined KT/A strategies with their own ideas, such as decorating photos (Coulthard, 2017) or adding drawings (Genuis et al., 2015a; Genuis et al., 2015b) or poetry (Liebenberg, Sylliboy, Davis-Ward & Vincent, 2017; Reich et al., 2017). End-of-project presentations were common. These were a chance to share youth-generated products such as videos and PowerPoint presentations, and celebrate community contributions and youth's hard work (Cooper, Driedger & Lavoie, 2018; Pollari, 2018; Riecken et al., 2005; Shea et al., 2013; Stewart et al., 2008; Trout, Wexler & Moses, 2018; Weinronk et al., 2018).

Most projects emphasized dissemination of data to local and academic communities. A smaller subset of projects mobilized knowledge to effect change. Youth co-researchers at one site for the *Spaces and Places* project developed a manual about their research journey, specifically targeted at researchers (Liebenberg et al., 2017; Reich et al., 2017)[1]. YRPs in the *PICTURE THIS* project participated in an extensive process of action, followed by reflection and modifications to their actions' approach (Johnston Goodstar, 2009). After presenting findings to policy-makers, YRPs determined that dominant institutions did not understand youth's communities or histories, or that they provided condescending or impractical advice. In response, YRPs changed tact, and redirected efforts toward counter-dialogue and Indigenous sovereignty. Knowledge was mobilized in the form of youth-led educational workshops (Conrad, 2015; Fletcher & Mullett, 2016; Markus, 2012). For example, YRPs who had been trained in video-making in the *Prevention and Preservation* project participated in a 'travelling training session' to teach video-making to people in other remote Indigenous communities (Fletcher & Mullett, 2016). In another unique example, YRPs participated in a panel at a community forum where they shared their

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[1] Examples of youth-driven KT/A initiatives from the *Spaces and Places* project can be found at www.youthspacesandplaces.org

thoughts about mental health of their generation, and facilitated small group conversations about coping with daily stress and making safer spaces for youth (Langdon et al., 2016).

Concrete plans for sustaining action were not frequently disclosed. Instead, numerous studies indicated local interest in sustaining action (Conrad, 2015; S. Fletcher & Mullett, 2016; Ford et al., 2012; Langdon et al., 2016; Pollari, 2018; Schinke et al., 2010). In one case, extending action was as small-scale as pre-school-aged research partners requesting permission to continue adding to their books even after the project was completed (Coulthard, 2017). Larger scale action included the development of local sport programming that would be offered for the foreseeable future (Schinke et al., 2010). The *Lumbee Rite of Passage Study* continued the program after the completion of research, but at a lower level due to challenges of maintaining community buy-in and membership on the community advisory board (Langdon et al., 2016).

Table 6   Frequency of scores (0, 1, 2, 3) for youth decision-making about KT/A strategies. Examples from studies are provided to illustrate scenarios that would receive the indicated score.

Score	Frequency of score	Example
0	20	YRPs did not choose how findings would be disseminated.
1	3	YRPs made recommendations about which interventions should be used, and how they should be adapted (Rushing & Stephens, 2012)
2	8	KT/A method was pre-determined to be videos, but youth co-researchers chose what their videos would look like, created them, and presented them to family and friends at a school feast (Riecken et al., 2005; Stewart et al., 2008).
3	7	YRPs chose to present photos in a travelling gallery. They also chose to leverage findings in dialogue with policy-makers, and later, counter-dialogue (Johnston Goodstar, 2009).

4.3 YOUTH EXPERIENCES AND OUTCOMES

4.3.1 Strategies for Assessing Youth Experiences and Outcomes

Eighteen studies reported on YRPs' experiences and outcomes related to participating in
CBPAR. Most data regarding experiences and outcomes were based on systematic assessments
integrated in study designs ($n = 14$). A small number of studies performed a superficial
assessment of youth's subjective experiences as co-researchers ($n = 3$), and only one study
reported anecdotal observations of YRPs' experiences and outcomes. The remaining studies did
not report on youth experiences and outcomes, therefore sample size for Question 3 was reduced
to 18. For the most part, assessment of youth experiences/outcomes took the form of surveys.
YRPs also participated in interviews, focus groups or debriefs to reflect on their experiences
throughout the research process, either in isolation or in addition to a survey method.

The most comprehensive assessment strategy was observed in the *Spaces and Places* project
(Liebenberg et al., 2017; Reich et al., 2017). University and community youth research partners
employed an assessment strategy called 'The Socratic Wheel', which was used to rate an issue
(such as youth inclusion) based on multiple criteria. In the discussion paper, written from the
perspectives of YRPs, authors suggested that the Socratic Wheel is a useful tool for teams to
introduce at the beginning of a CBPAR project to determine expectations and responsibilities of
team members (Reich et al., 2017). At the completion of the research, teams may return to the
wheel to assess whether or not the proposed roles and responsibilities played out in reality as
they were conceived at the start. Notably, a discussion paper about the project was written from
the perspectives of youth co-researchers on the project, although the actual writing and editing
was completed by non-youth researchers.

Academic journals have strict limitations on word count, which may limit some authors from
discussing YRPs' subjective experiences during and after the project. However, authors devised
strategies for supplementing information about youth's experiences throughout the project. They
published additional reflective papers (Bird-Naytowhow et al., 2017; Conrad, 2015; Fast et al.,
2017; Reich et al., 2017; Shea et al., 2013) and referred to project websites (Conrad, 2015;

Fletcher & Mullet, 2016; Liebenberg et al., 2017), videos (MacDonald, 2015), Facebook pages (Morris, 2016), and blogs (Jensen, 2012) where readers can learn more about the project. Such resources contain valuable first-hand information about youth leadership in research, and provide ample reason to include grey literature in future evidence syntheses about CBPAR. Four references were doctoral dissertations (Coulthard, 2018; Fast, 2014; Johnston GoodStar, 2010; Pollari, 2018), which consistently included more information about research relationships and experiences of youth co-researchers. All dissertations were longer than 200 pages (Coulthard, 306; Fast, 235; Johnston GoodStar, 260 pages; Pollari, 383), and therefore faced no word limitations that might preclude discussions about relationships and experiences of researchers throughout the project. Often, observing youth researchers' process and assessing the success of the youth engagement approach was an overall research objective.

4.3.2 Affective Experiences and Outcomes

Authors frequently reported positive affective outcomes for youth research partners. Youth indicated increased confidence ($n = 8$), self-value ($n = 8$) and pride ($n = 7$) on personal, professional and community levels.

Confidence ($n = 8$). As research partners, youth completed tasks that initially seemed daunting, such as interviewing community members, presenting to university researchers, and collecting scientific data. Succeeding at such tasks fostered youths' self-efficacy. For example, one female participant in the *Life in Rigolet* project described feeling more confident in her filmmaking skills, "I've learned more about technology now so I won't be like 'I can't do this' and now I'll be like 'Oh I know what to do!'"(MacDonald et al., 2015, p. 492). Increased confidence was related to youths' sense of their own potential to effect change in their community.

"I am valued" ($n = 8$). YRPs expressed feeling valued and respected by other researchers and community members who observed their work. Research teams recognized youth partners' value by ensuring that youth members on the team received equal control and voice in research discussions, and by continuing to solicit and apply youth advice about research activities (Ford,

Rasmus & Allen, 2012). Recognizing and appreciating youths' unique expertise on the lives of other youth, as well as intricacies of their community, further emphasized their valued role on the research team (Genuis et al., 2015a; Genuis et al., 2015b). Therefore, youth were more likely to feel valued if they were included in making decisions about research, especially the meaning of data. Youth partners on the *Youth Uncensored* project (Conrad, 2015) presented to service providers in their community. At the presentations, youth problematized common ways that service providers work with youth in their community, and suggested better ways. Service providers proved to be avid learners, thereby affirming youths' position as teachers who shared valuable lessons. Other ways that youth reported feeling valued or respected included being trusted with filming equipment (MacDonald et al., 2015).

University research partners demonstrated appreciation and respect for youth's contributions by gifting tobacco (Bird-Naytowhow et al., 2017), compensating them for their time (Conrad, 2015; Jensen, 2012; Lopez, Sharma, Mekiana & Ctibor, 2012; Sharma, Lopez, Mekiana Ctibor & Church, 2013; Trout, Wexler, et al., 2018; Weinronk et al., 2018), offering official certificates (Blangy et al., 2018; Gérin-Lajoie et al., 2018; Liebenberg et al., 2017; Pollari, 2018; Reich et al., 2017), and including them as authors (Bird-Naytowhow et al., 2017; Clark et al., 2013; Fast et al., 2017; Lopez et al., 2012; Reich et al., 2017; Sharma et al., 2013; Weinronk et al., 2018) or including their name in acknowledgments in publications (Big-Canoe & Richmond, 2014; Bird-Naytowhow et al., 2017; Coppola, Dimler, Letendre & McHugh, 2017; Coulthard, 2018; Fast, 2014; Ford et al., 2012; Garwick, Rhodes, Peterson-Hickey & Hellerstedt, 2008; Genuis et al., 2015a; Genuis et al., 2015b; Jardine & James, 2012; Jensen, 2012; Liebenberg et al., 2017; Lopez et al., 2012; MacDonald et al., 2015; Margalit et al., 2013; McHugh & Kowalski, 2011; Perry & Hoffman, 2010; Pollari, 2018; Riecken et al., 2005; Skinner & Masuda, 2013; Trout, Wexler, et al., 2018; Weinronk et al., 2018).

Pride (*n* = 7). Youth and adult researchers observed increased youth pride related to the research project, youth contributions to research, and the community to which they belong. As with confidence, youth pride was fostered by youth presentations at community and scholarly gatherings. In these contexts, youth had opportunities to demonstrate new knowledge, and receive praise and affirmations from local and non-local audiences. Even the youngest youth

research partners in the sample demonstrated pride for themselves and the project. Staff co-researchers assisting CBPAR with pre-school-aged youth indicated that watching the "children's sense of pride as they shared their books with others was the most inspirational part!" (Coulthard, 2018, p. 190).

YRPs communicated that research activities reinforced their pride for their community and culture (Clark et al., 2013; Coulthard, 2018; Fletcher & Mullett, 2016; Liebenberg et al., 2017; MacDonald et al., 2015; Pollari, 2018; Reich et al., 2017; Trout, Wexler, et al., 2018; Weinronk et al., 2018). Community pride was enhanced when youth were positioned as community representatives in academic contexts (Trout, Wexler & Moses, 2018; Weinronk et al., 2018). By nature of some research questions, community pride was also reinforced through conversations with research participants. For example, over the course of collecting data for the *Beyond Two Worlds* project, youth co-researchers decided to add culture as a new theme for inquiry (Trout, Wexler, et al., 2018; Weinronk et al., 2018). Youth co-researchers conducted interviews with community members, exploring questions of community development and family, as well as differences between generations, leadership and culture. Reflecting on dialogue that occurred through the research, one Inupiaq youth researcher stated:

> "I think one of the things I'm gonna remember from now on is … be proud of being in your culture, I guess. Sort of like how, don't be afraid of who you are, be proud of it also. Like how, [interviewee] said be proud. And don't be ashamed of being Inupiaq … Her story was touching." (Weinronk et al., 2018, p. 447).

4.3.3 Strengthened Skills and Relationships

Skill-building. Learning and skill development were the most cited outcomes for youth research partners (Bird-Naytowhow et al., 2017; Clark et al., 2013; Fletcher & Mullett, 2016; Genuis et al., 2015a; Genuis et al., 2015b; Jardine & James, 2012; Jensen, 2012; Johnson, Bartgis, Worley, Hellman, & Burkhart, 2010; Liebenberg et al., 2017; MacDonald et al., 2015; Pollari, 2018; Reich et al., 2017; Riecken et al., 2005; Stewart et al., 2008). As stated by one youth co-researcher:

"Being a part of the project helped me to grow many strengths through interviewing others, putting myself out there in the community, and learning to work and be accountable." (Clark et al., 2013, p. 40)

Youth learned about the research topic, improved skills relevant to research methods, and practised collaborating with peers and adults. Research projects created opportunities for skills development that youth may not otherwise have had access to. For example, one student researcher in the *Traditional Pathways to Health* project shared:

"I learned to do movies and how to work the video camera and I just never got the opportunity to do that before and because I don't have that kind of money to buy a video camera and do that, so I like that." (Stewart et al., 2008, p. 186).

YRPs reported that although they were challenged by some research activities, they were able to rise to those challenges with support from senior researchers on the team. YRPs identified making presentations as especially challenging, but that making those presentations helped them develop new skills, access new opportunities, and positively influence other people's opinions about their demographic.

Community relationships. Many CBPAR projects engaged community members from multiple generations as research partners or participants. Youth revealed that they enjoyed having Elders from their community involved in research with them (Blangy et al., 2018; Fletcher & Mullett, 2016; Gérin-Lajoie et al., 2018; Johnston GoodStar, 2010; MacDonald et al., 2015). In some instances, YRPs decided who to recruit as research participants, which gave them the power to identify whose perspectives they thought were important, and then reinforced their connection to those individuals through research activities. One teacher facilitating the CBPAR process reported, "Unquestionably, this process influenced students' relationships and strengthened support networks that keep people together and connected." (Stewart et al., 2008, p. 187).

4.3.4 Attitudes and Behaviours

Perspectives about the community. YRPs shared that engaging as co-researchers changed their perspective about their community, the people in their community, and about research and academia. When youth personally conducted data collection (beyond making decisions about methods), they had the chance to engage community members in conversation about topics they never discussed before (Fletcher & Mullet, 2016; Trout, Wexler & Moses, 2018; Weinronk et al., 2018). When youth were also involved in choosing research objectives and/or questions, conversations could include topics that resonate with them. In the *Traditional Pathways to Health* project, student researchers interviewed people in their community about health and injury-prevention topics of their choosing. One student reflected:

> "Making the movie has changed me. I've asked people that I've known forever questions. The person opens up about things that you wouldn't normally talk about at the dinner table, stuff that I didn't know about my aunt's past and how tradition and culture played a role in her career" (Riecken et al., 2006; no page numbers; quote #48).

Sometimes youths' perspectives about community members shifted, and sometimes they came to see the community as a whole in a different light. After completing the *Beyond Two Worlds* project, one Inupiaq youth co-researcher shared:

> "I already had an image of what [town name] was, and the people were inside of it – and it was right. And then we brought those people in, and, well, I also saw another part of the community that is also right – it's just, I hadn't seen it yet" (Weinronk et al., 2018, p. 445).

Perspectives about research. For some youth, being a research partner changed how they perceived the idea of research overall. Participating in research methods that employed alternative and youth-friendly strategies (such as video) expanded youths' ideas of what research could look like (Riecken et al., 2005; Stewart et al., 2008). One youth explained that her perspectives on research changed when she learned the ways that research can be used to help others (Clark et al., 2013). Youth interns participating in *Imalirijiit* land camps started to view science differently as a result of participating in research methods that had been embedded in

intergenerational knowledge exchange. Youth observed how traditional Indigenous knowledge and Western scientific knowledge can complement one another, and how it can contribute to the overall positive impact of research on protecting the environment (Blangy et al., 2018; Gérin-Lajoie et al., 2018).

Spending time with university researchers and in academic environments demystified youths' understandings of the world of academic research (Liebenberg et al., 2017; Reich et al., 2017). In the *Prevention and Preservation* project, a van equipped with necessary research tools, including video technology, met youth co-researchers in their communities (Fletcher & Mullett, 2016), thereby reducing perceived distance between their own lives and academia.

Sense of responsibility and leadership (*n* = 5). Youth acknowledged the responsibility of being a research partner. They felt the responsibility to be good representatives of their culture and role models within the community. Research objectives relevant to community needs and interests increased YRPs' sense of responsibility and commitment to do a good job. Youth research partners were less likely to take responsibility or leadership on the project if they were not involved in developing research objectives or methods. When youth were not involved at these early stages, they were less familiar with the project and therefore less likely to feel confident taking the lead (Trout, Wexler and Moses, 2018; Weinronk et al., 2018). Continuing to solicit youth perspectives and acting on them was essential for maintaining youth involvement throughout the CBPAR process (Ford, Rasmus & Allen, 2012).

Motivation. Youth co-researchers demonstrated new motivations to contribute to their community (*n* = 5), to pursue education and career goals (*n*=4), and to improve themselves/take initiative (*n*=5; Conrad, 2015; S. Fletcher & Mullett, 2016; Ford et al., 2012; Genuis et al., 2015a; Genuis et al., 2015b; Jensen, 2012; Liebenberg et al., 2017; Pollari, 2018; Reich et al., 2017; Riecken et al., 2005; Stewart et al., 2008; Trout, Wexler, et al., 2018; Weinronk et al., 2018). Youth who assisted their community through research activities gained knowledge and experience necessary to continue to perform community service deeds after the research ended. For example, youth research partners in the *CIPA: Southwest Alaska* project conceived KT/A activities that would directly benefit their community, including delivering wood to Elders and

cleaning up graffiti. They received generous praise for their actions, which inspired them to continue the community service activities after completion of the research (Ford, Rasmus & Allen, 2012).

Youth motivation was related to praise and regular positive reinforcement, both from within the research project and from the community. For example, facilitators of the *IMALIRIJIIT* project offered 'Scientist of the Day' awards, and 'Apprentice' and 'Full Scientist' certificates to boost youth motivation (Blangy et al., 2018; Gérin-Lajoie et al., 2018). This was especially important when youth were feeling discouraged or homesick during fieldwork.

Community members emphasized the importance of empowering youth in order to inspire them to make important contributions to community progress and well-being (Pollari, 2018). Indeed, many YRPs expressed motivation to give back to their communities (Conrad, 2015; Ford et al., 2012; Liebenberg et al., 2017; Pollari, 2018; Reich et al., 2017; Trout, Wexler, et al., 2018; Weinronk et al., 2018). One youth co-researcher on the *Melq'ilwiye* project said:

> "Presenting the findings [at a] conference made me feel proud and helped me to know that I am valued and that I can make a difference for my Aboriginal people." (Clark et al., 2013, p. 40).

After the completion of research, youth carried on to accept new professional and academic challenges. One YRP said that the *Youth Uncensored* project provided her the support she needed to finish high school and go on to college (Conrad, 2015). Students involved in the *Nuvuk Archeology Project* went on to pursue college degrees in archeology and anthropology, which were fields related to the research (Jensen, 2012). Youth workshop facilitators in the *Prevention and Preservation* project were hired to coordinate similar workshops at schools and community venues (Fletcher & Mullett, 2016). The *Beyond Two Worlds* project recruited a group of Indigenous youth co-researchers from Alaska, and another group from universities in the US. The two groups worked as a single team, and in the process, broke down barriers rooted in the two sets of youth's divergent backgrounds. Illustrating similarities between Inupiaq (Indigenous) and 'Lower 48' (non-Indigenous researchers) youth co-researchers had a motivating effect for one Inupiq youth:

"You guys – you know how you guys are in college and everything, and you guys get to go on programs and travel out – like, that motivates me. 'Cause I want to go to college and see how that life is." (Weinronk et al., 2018, p. 450).

Some youth research partners identified participating in research as contributing to their personal healing journeys and to making new life choices. Youth partners in the *Youth Uncensored* project shared that being a part of the project helped them better understand and recover from addictions (Conrad, 2015). Student researchers on the *Traditional Pathways to Health* project explained that things they learned in the project supported their healing from past trauma and inspired them to make healthier and more traditional eating choices (Riecken et al., 2005; Stewart et al., 2008).

Connection to culture. When culture was integrated in the research process – whether as part of the research topic or methods – YRPs noted outcomes related to their culture identity. One YRP involved in a participatory video project explained, "I just realized [through doing the video] how much I don't take culture lightly; how much it means to me." (Riecken et al., 2005, no page numbers, quote #54).

They described learning more about their culture (*n* = 4; Coulthard, 2018; Fletcher & Mullett, 2016; Jensen, 2012; Liebenberg et al., 2017; Reich et al., 2017), connecting with their Indigenous identity (*n* = 4; (Fletcher & Mullett, 2016; Johnston Goodstar, 2009; Riecken et al., 2005; Stewart et al., 2008; Trout, Wexler, et al., 2018; Weinronk et al., 2018) and realizing how much they value their culture (*n* = 3; Jensen, 2012; Riecken et al., 2005; Stewart et al., 2008; Trout et al., 2018; Weinronk et al., 2018). Through their participation in CBPAR, some YRPs recognized ways that culture contributes to their well-being (Riecken et al., 2005; Stewart et al., 2008). YRPs demonstrated enthusiasm for projects that created opportunities for them to spend time in nature, and for the physical environment of their traditional territory (Pollari, 2018). They also expressed joy in sharing their culture with others (*n* = 2), and in being representatives of their community so that other people could connect with their community (Jensen, 2012; Trout,

Wexler, et al., 2018; Weinronk et al., 2018). As stated by one Inupiaq youth co-researcher in reference to non-Indigenous co-researchers,

> "I like, not like teaching people, but telling about things about my culture. And I think it's awesome to, like, let them know about our culture… I kind of wish that there's people who come down here to learn Inupiaq and teach them, spread it around. I think it's cool how you guys are interested." (Weinronk et al., 2018, p. 448).

4.4 BARRIERS AND FACILITATORS

Research Question 5 related to barriers and facilitators of effective research partnerships with Indigenous youth. The same thematic coding approach used to answer question 4 (youth outcomes) was used for question 5; however, observations about facilitators and barriers were coded regardless of whether or not they were reported from the perspective of youth or other members of the research team. Facilitators were defined as any discrete or general research strategy that promoted positive experiences for YRPs, or their overall inclusion as partners and decision-makers. Barriers were defined as any discrete or general research strategy that inhibited positive experiences for YRPs, or their overall inclusion as partners and decision-makers.

4.4.1   Developing Relationships

Studies consistently emphasized the importance of developing a strong, trusting relationship between youth partners and adult researchers. Entire reflective papers were devoted to discussing development and maintenance of relationships between lead researchers and youth partners, as well as among youth members on research teams (Bird-Naytowhow et al., 2017; Reich et al., 2017; Weinronk et al., 2018). Many youth research partners spoke to the strength of their relationship with other youth and non-youth researchers. For example, one student research intern on the *Nuvuk Archeology Project* commented on the team's Facebook group:

> "None of us could have asked for a better job to start our careers. I'll never forget the work we did together and all the memories we made." (Jensen, 2012).

As illustrated in this quote, strong relationships within youth-inclusive research teams have potential to leave lasting positive impressions on youth. In this way, quality of relationships has the potential to shape Indigenous youths' perspectives on work, education, research, and collaboration within and outside of their communities. Authors and youth indicated that enjoyable, productive relationships promoted continued youth engagement in research activities, even over long timelines of two or more years (Reich et al., 2017).

'Here for a good time and a long time'. Studies emphasized that effective research relationships with youth take a long time to develop, especially if lead researchers are not from the community, which was most often the case (Coulthard, 2018; Liebenberg et al., 2017; Lopez et al., 2012; McHugh, Coppola, Holt, & Andersen, 2015; Morris, 2016; Perry & Hoffman, 2010; Reich et al., 2017; Sharma et al., 2013). To this end, researchers need to plan adequate amounts of time to nurture relationships with youth partners. Studies that did not allocate enough time to develop relationships cited this as a shortcoming (Bradford, Zagozewski, & Bharadwaj, 2017; MacDonald et al., 2015; Margalit et al., 2013; Pollari, 2018; Shea et al., 2013). Conversely, researchers who had pre-existing relationships with the research community noted these long-standing ties were beneficial to the project by way of supporting relationship development with youth partners (Big-Canoe & Richmond, 2014; Coulthard, 2018; Morris, 2016; Pollari, 2018).

Positive research partnerships were fostered by spending casual time together outside of the research setting. Non-local researchers indicated living in the community for long periods of time (Jensen, 2012; one year), and increasing their presence at community venues in order to create 'chance' opportunities to develop relationships, both with their local partners and with the wider community (Lopez et al., 2012; Sharma et al., 2013). Time was important both before the project and throughout the course of research. Authors speculated that their ability to forge meaningful and productive relationships with YRPs was hindered by insufficient time spent together due to restrictions imposed by inflexible project timelines (Bradford et al., 2017; Jardine & James, 2012; MacDonald et al., 2015; Margalit et al., 2013; Pollari, 2018; Shea et al., 2013). Outside researchers on the *Sport is Community* project made non-research contributions to the community such as sport programming and helping out at school feasts over four years (McHugh

et al., 2015). Although such time together may be somewhat 'manufactured', the resulting connections made and trust developed were genuine. One youth researcher explained:

> "Importantly, this time was not focused on the research, but on connecting and enjoying one another's company. Because of this, our overall experience of the research project—and the dissemination activities in particular—was positive. Both the project and our relationships became very meaningful to us all." (Reich et al., 2017).

Developing trust. Taking the time to develop trust with youth partners is especially important when research seeks to learn about youths' lives and their communities (Reich et al., 2017). Authors described developing both professional and personal relationships between university and youth research partners. For example, Bird-Naytowhow and colleagues (2017) explain that, "as we became attuned to the youths' real-world circumstances, our research process became an opportunity to encourage youth and support perseverance and resilience processes." Authors described creating deliberate time and space for dialogue with YRPs, where frank and personal conversations could safely take place (Genuis et al., 2015a; Genuis et al., 2015b; Perry & Hoffman, 2010). In these exchanges, senior researchers came to better understand youth's position in their community, and how that position influences their participation in CBPAR (Perry & Hoffman, 2010).

Dialogic space facilitated youth decision-making by making it more possible for them to share and be heard. Youth indicated that these non-judgemental and supportive spaces helped them feel more comfortable and confident in the research process (Bird-Naytowhow et al., 2017; Conrad, 2015; Liebenberg et al., 2017; Reich et al., 2017; Riecken et al., 2005; Stewart et al., 2008). Authors noted numerous strategies for fortifying these comfortable, dialogic spaces. Some projects adopted consensus decision-making models on research teams to further reinforce that all partners' concerns and ideas matter equally (Jumper-Reeves, Dustman, Harthun, Kulis, & Brown, 2014; Lickers, 2017; Schinke et al., 2010). Authors expressed that having an established 'basecamp' for the project was important, especially if the space was already familiar to youth as a safe place (Liebenberg et al., 2017; Morris, 2016; Riecken et al., 2005; Stewart et al., 2008). On the contrary, authors noted that *not* having a project basecamp was detrimental to developing

trust and relationships with youth in CBPAR (Pollari, 2018). Interestingly, multiple studies identified the sharing of food as a key motivator for developing relationships and putting youth partners at ease. For example, Genuis and colleagues noticed a striking difference in youth participation in debriefing session before and after one of the university researchers started bringing in home-cooked food. Within food at the meetings, the environment changed, and conversations opened up more easily (Genuis, 2015a; Genuis, 2015b).

Engaging youth early on. Authors related engaging YRPs early on in research stages to their sustained interest in the project over time (Perry & Hoffman, 2010; Trout, Wexler & Moses, 2018; Weinronk et al., 2018). Actively including YRPs at the beginning made it more possible for them to be involved in all consecutive stages of research. However, some authors noted institutional barriers to engaging YRPs early. For example, Liebenberg and colleagues (2017) were concerned that contacting youth before university ethics approval was granted would not be permitted. As a compromise, authors solicited input from younger adults in the study communities for the research proposal. Similarly, Morris (2016) worked around institutional restraints by integrating flexible language (i.e., "Inuit-determined") in research proposals to protect flexibility for the community to make decisions about research after it had been approved.

Positioning youth as experts. YRPs possess unique expertise on research matters that concern them and their communities. Research topics selected by youth tended to be topics about which they possessed personal knowledge. Research topics chosen by or in collaboration with youth included communities of sport (McHugh et al., 2015), sources of resilience in the inner city (Bird-Naytowhow et al., 2017), and community, culture and leadership (Trout, Wexler, et al., 2018; Weinronk et al., 2018). Some research topics in the sample were not related to YRPs' experiences (Blangy et al., 2018; Gérin-Lajoie et al., 2018; Jensen, 2012; Margalit et al., 2013; Pollari, 2018); therefore, youth were less capable of making informed choices about the project. Research topics about which youth were not experts greatly reduced YRPs' capacity to contribute to the project. For example, one year after the *IMALIRIJIIT* project started, the larger research team decided to decrease youth inclusion in actual data collection, and instead, frame their participation as only a learning opportunity(Blangy et al., 2018; Gérin-Lajoie et al., 2018).

4.4.2 Meeting Youth Where They are at

Accommodating youth's interests. When YRPs were involved in choosing research objectives and/or questions, it was likely because the research topic was important to them and to their community, promoting their investment research outcomes. Even when youth were not included in decision-making about research objective, questions, or methods, they still showed more enthusiasm for the project if they believed that the topic was important to the community, and that, by being a part of the project, they would be making valuable contributions to the community ($n = 4$; Genuis et al., 2015a; Genuis et al., 2015b; Gérin-Lajoie et al., 2018; Jensen, 2012). For example, in Jensen's (2012) excavation project, YRPs would be 'solving mysteries of the past and saving their ancestors' remains before they fell into the ocean from an eroding coastline.' Liebenberg and colleagues (2017) explained that the more buy-in from youth into the *Spaces and Places* project, the more ownership they felt, and the more they wanted to get involved. One staff on the project said:

> "Youth are more willing to come out and help us. Because they see a difference and . . . so I think a lot of kids want to jump on board and are saying "hey! I want to be a part of that!" (Liebenberg et al., 2017, p. 7).

Instances where YRPs did not enjoy participating in CBPAR were usually the result of not including them in decisions about how the research process will proceed. For example, even though today's youth are a technology-oriented demographic, it cannot be assumed that they would be interested in making videos or learning from PowerPoint presentations (Riecken et al., 2005; Stewart et al., 2008). Some projects employed multiple modalities of youth-participatory methods in order to compensate for discord between methods and youth interests (Shea et al., 2013). Occasionally, the nature of the research precluded extensive flexibility for youth to make decisions. If the project is not flexible, it might be best to be clear about what it entails so that it attracts only youth who are truly enthusiastic about it (Jensen, 2012). Being transparent about what youth can expect if they choose to be research partners is important in order to manage

expectations. For example, Bird-Naytowhow and colleagues (2017) chose to be realistic with youth partners about the potential of the project to bring about change.

At times, accommodating youths' interests meant accepting that there were parts of research that were uninteresting to them. YRPs were not always required to participate in all project activities if they chose not to (Bird-Naytowhow et al., 2017). Reich and colleagues (2017) noted that part of demonstrating respect for YRPs was acknowledging their responsibilities and relationships outside of the research, which could sometimes interfere with their participation. For analysis, YRPs often contributed to theme development (in qualitative research), but would not participate in more systematic analysis procedures. This was often pre-determined in the study design, but on two occasions, when given the option to participate in analysis, YRPs chose not to (Coppola et al., 2017).

Providing appropriate tools and training. CBPAR project employed specific strategies to help youth partners be successful as researchers. The needs of YRPs varied based on their age. Some were university students who required little additional support in order to contribute to a rigorous knowledge-generation exercise, whereas others were younger children who required specific supports in order to be successful in their roles. Senior researchers balanced modifying methods to meet YRPs' needs with maximizing youths' agency as decision-makers. Pre-school aged co-researchers in the *Early Authors Program* were provided iPads in child-friendly cases to eliminate their reliance on adults to help them take photos (Coulthard, 2017). Similarly, a teacher in the *Youth Voices on Tobacco* project suggested giving school-aged YRPs disposable, rather than digital, cameras in case they got lost or damaged. The risks were lower, and youth would not be faced with feeling responsible for losing or damaging an expensive item (Jardine & James, 2012).

Research training for YRPs ($n = 16$) was an important means of promoting their success in executing research methods. In two cases, insufficient training was cited as a barrier to YRPs' ability to effectively participate in data collection, as well as contributing to later decisions about the meaning of data and knowledge translation (Blangy et al., 2018; Gérin-Lajoie et al., 2018; Trout, McEachern, Mullany, White, & Wexler, 2018; Weinronk et al., 2018). After research began, YRPs often received continued personal and instrumental support from senior

researchers. Senior researchers made themselves available to mentor youth in data collection strategies to help them be successful in the field (Blangy et al., 2018; Gérin-Lajoie et al., 2018; Jensen, 2012; Skinner & Masuda, 2013). Furthermore, YRPs were provided with the tools and technology that they required to be successful. Because of their age, authors frequently realized that employing technology-based methods facilitated YRPs' success (Riecken et al., 2005; Stewart et al., 2008).

4.4.3 Enlisting Help from Local Adults

Local coordinators, researchers and gatekeepers played facilitating roles in CBPAR projects with Indigenous youth ($n = 8$). These local (adult) partners were particularly helpful in navigating logistics in the community where research took place (Big-Canoe & Richmond, 2014; Langdon et al., 2016; Liebenberg et al., 2017; Reich et al., 2017). Only four papers revealed that one of the first two authors were local members (in one case, they were not Indigenous, but rather a long-time community member). Therefore, lead authors in this sample typically lacked working knowledge of the community that is critical for executing research processes in the study setting. Turnover and inconsistent participation of YRPs was noted as a challenge in CBPAR, but inclusion of local adults helped recruit youth, earn their trust, and retain YRPs over the course of research (Fast, 2014; Fast et al., 2017; Langdon et al., 2016). Adult members of the community were also more informed about youths' lives and their competing priorities. They were therefore well-positioned to make suggestions about ways to accommodate youth's other responsibilities in order to enable additional involvement, or to manage outsider-researchers' expectations about how much participation from youth could be expected (Liebenberg et al., 2017; Reich et al., 2017). They bridged the community-academic divide, earning local buy-in and facilitating communication between university researchers and YRPs at the initial development state of the research relationships. . As illustrated by Langdon and colleagues (2016):

> "[The local field coordinator] is familiar with dynamics of various Lumbee communities, which include differences based on the unique culture of each part of the county and variation in socioeconomic status and community norms. Due to the field coordinator's expertise in previous research and the community, she was successful in nurturing community relationships, recruiting,

and interacting with participants; and exercised a strong understanding of the importance of confidentiality." (Langdon et al., 2016, p. 460).

4.4.4 Integrating Community and Culture

Reinforcing community bonds. CBPAR projects that facilitated interactions between YRPs and community members of all ages strengthened YRPs' personal networks. Youth were not always friends before joining CBPAR teams. Girls who participated in CBPAR with Shea and colleagues (2013) expressed that their favourite part of the project was meeting other youth. Intergenerational dialogue between youth and Elders was found to be especially valuable (Blangy et al., 2018; Cooper et al., 2018; Fletcher & Mullett, 2016; Gérin-Lajoie, 2018; MacDonald et al., 2015). Some research designs facilitated dialogue between generations as a part of data collection (Trout, et al., 2018; Weinronk et al., 2018). In these designs, YRPs had the opportunity to converse with people in their community that they had not previously spoken to, which strengthened their knowledge about their community and its people (Trout, et al., 2018; Weinronk et al., 2018).

Designs that positioned older youth as mentors for younger youth were effective for engaging youth of all ages (Genuis et al., 2015a; Genuis et al., 2015b; Pollari, 2018). In *Food Traditions… Passed Down to Us,* older youth co-researchers facilitated Photovoice activities with younger youth participants (Genuis et al., 2015a; Genuis et al., 2015b), projecting a sense of belonging and kinship with the younger students. At the end of the project, they believed that intentional dialogue between generations was important for reinforcing relationships within their community, as illustrated in the following quote by one of the youth co-researcher: We're going to be seeing them [the younger students] for our whole lives'' (Genuis et al., 2015a; Genuis et al., 2015b).

Indigenous culture and ceremony. Five studies emphasized the importance of integrating culturally-reflexive methods into the research (Bird-Naytowhow et al., 2017; Blangy et al., 2018; Coulthard, 2018; Gérin-Lajoie et al., 2018; Genuis et al., 2015a; Genuis et al., 2015b; Morris, 2016). In some cases, endowing research with Indigenous ceremony and

spirituality proved to enhance the experience for all members of the research team (Bird-Naytowhow et al., 2017; Morris, 2016). The *Youth Resilience Project* galvanized cultural ceremony to bring team members together and add spiritual significance within the process (Bird-Naytowhow et al., 2017). For example, the research team held a sacred fire outside the city, attended a sweat lodge, and participated in a 2-day camping trip. YRPs on the project decided whether or not to participate in ceremonial activities (as well as in other research activities), reinforcing their agency to determine if and how they chose to accept opportunities to connect with local Indigenous culture through research.

Research designs did not necessarily require Indigenous ceremony or spirituality to be incorporated into their research in order to be culturally reflexive. They reflected Indigenous values by honouring the land, relationships between generations, and traditional knowledge about research topics. YRPs responded positively to opportunities to learn about and connect with the land in ways that reflect Indigenous knowledges (Blangy et al., 2018; Gérin-Lajoie et al., 2018; Johnston GoodStar, 2010; Pollari, 2018). Referring to the emphasis on 'place,' one YRP said, "THIS! This is what I want to learn about" (Johnston Goodstar, 2009). Blangy and colleagues (2018) observed that integrating Indigenous values into the project design helped YRPs see research in a different light:

> "Camping on the land, doing hands-on activities that mix science with other activities, and sharing between generations and cultures all contributed to a different perception of science for the local participants and a better link between community and researchers." (Blangy et al., 2018, p. 121).

Not all projects emphasized Indigenous culture in research methods. A project that took place in an urban setting did not integrate traditional knowledge or ceremony out of respect for the fact that not all participants actively engaged with Indigenous ceremony or traditional knowledge (Cooper et al., 2018).

Where outsider researchers were involved, demonstrating respect for local belief systems and Indigenous ways of knowing fostered trust and established relationships between YRPs and their

non-local research partners (*n* = 5; Ford et al., 2012; Langdon et al., 2016; Lopez et al., 2012; Pollari, 2018; Schinke et al., 2012; Sharma et al., 2013). In some cases, discord between local and non-local researchers' culture background posed a challenge. Differences manifested in disagreement about time management (Weinronk et al., 2018), as well as traditional beliefs about mapping sacred buildings (Pollari, 2018), and about youths' position in the community (Jumper-Reeves et al., 2014). In all cases, non-local researchers deferred to local researchers to make final decisions about how to proceed, while respecting local belief systems.

While not explicitly a matter of Indigenous culture, YRPs communicated a preference for research approaches that emphasize positive aspects of their community and culture, rather than dwelling on trauma and shortcomings. For example, YRPs on one project advised that interview questions should inquire about positive aspects of participants' lives (Fast 2014; Fast et al., 2017). Likewise, YRPs on another project communicated that knowledge translation activities were most meaningful when they highlighted community and cultural strengths (Reich et al., 2018). One YRP on the *Youth Voices on Tobacco* project noticed that many themes represented in the final KT/A book were negative, and she therefore suggested pairing them with positive alternatives (Jardine & James, 2012). In response to her suggestion, pictures illustrating the theme, "smoking is unhealthy", were paired with pictures of healthy activities.

4.4.5 Accessibility

> "The more accessible the research process was to youth, the more youth became involved in the process. This included everything from where we met physically, to how we presented information, and how we did dissemination through the action groups" (Ford, Rasmus & Allen, 2012, p. 5).

Communication media. Authors reflected on certain approaches to youth engagement that proved effective in their projects. Some authors found technology to be a very effective medium for communicating with youth (Fletcher & Mullett, 2016; Jensen, 2012). Numerous projects created blogs, websites and Facebook pages, and indicated that they used these media to reinforce knowledge translation and as a way to stay in touch after the project was completed

(Fletcher & Mullett, 2016; Morris, 2016). On the contrary, some studies found that videoconferencing and emailing hindered communication. In one case, lead researchers consistently struggled to engage youth partners, eventually visiting a university class populated by Indigenous students (Fast, 2014; Fast et al., 2017). They observed that having prescribed, in-person time to consult with youth was much more effective than the digital methods previously attempted.

Structural barriers. Many Indigenous YRPs resided in remote communities, which posed a challenge to their participation in CBPAR (n = 4; Morris, 2016). Projects overcame remoteness by providing transportation to enable them to meet in person, and by galvanizing technology for communication between remote settings (Fletcher & Mullett, 2016; Morris, 2016; Shea et al., 2013). However, funding constraints placed limitations on solutions to address the remoteness. In one case, YRPs in an urban area suggested finding ways to include Inuit youth in Northern areas, but the lack of funds precluded acting on this idea (Morris, 2016). Authors also recognized that many communities of study and youth partners experienced high levels of poverty (Conrad, 2015; Johnston Goodstar, 2009). To this end, community members, authors and YRPs indicated that offering payment to youth partners was an important incentive for their involvement (Conrad, 2015; Jensen, 2012).

Learning styles. As young minds, many YRPs had developing cognitive capacities. Adjusting to youths' unique learning needs was particularly important for research training sessions. Lead researchers who recognized youths' differing learning needs devised alternative ways to go about research that would be engaging for youth partners. Most YRPs preferred to learn by doing (Jensen, 2012). In another study, university researchers made the mistake of assuming high-school-aged YRPs would respond to the teaching styles they employ in university lectures (i.e., Powerpoint and lectures) (Riecken et al., 2005; Stewart et al., 2008). The lead researcher on the *Traditional Pathways to Health* project recalled:

> "I used the same methods I would have used with a university class – I had some overheads, […] and as I worked my way through this presentation, I had a strong sense of just how badly I was "bombing" in my approach. Student looks, if they were my way at all, were that of indifference.

Several turned their backs toward me […]. As a group, they seemed bored and uninterested." (Riecken et al., 2005, no page numbers).

Coulthard (2017) went to extensive lengths to modify her research approach to be appropriate for pre-school-aged research partners. iPads for picture-taking were outfitted with child-friendly cases so that YRPs could decide what photos to take. Cognisant of children's interest in material 'proof' of their accomplishments, Coulthard took pictures of YRPs' work so that they could bring original work home every day. Child co-researchers were presented with structured opportunities to make decisions, such as what photos they wanted in their book, or the text was contained on the pages in their book. Similarly, Jardine and James (2012), and Shea and colleagues (2013), indicated that a simple, structured approach is appropriate for younger research partners.

Collaborating with schools. YRPs had busy lives outside of research. They had school, family responsibilities, and extracurricular activities that consumed a great deal of their time. Competing priorities were cited as a factor that contributed to irregular participation of YRPs (Blangy et al., 2018; Coppola et al., 2017; Fletcher & Mullett, 2016; Gérin-Lajoie et al., 2018; Jensen, 2012; Morris, 2016; Pollari, 2018; Trout et al., 2018; Weinronk et al., 2018; Wexler et al., 2013). Some projects integrated structured research activities within the school system, whereby studies were integrated into the classrooms and after-school-clubs; some even developed new class curricula to bring research into the school (Bradford et al., 2017; Genuis et al., 2015a; Genuis et al., 2015b; Jardine & James, 2012; Morris, 2016; Pollari, 2018; Riecken et al., 2005; Stewart et al., 2008). Doing so posed both pros and cons. Collaboration with schools offered support from teachers, a workspace, a structured environment where youth are accustomed to focusing, and increased incentive for youth to participate (i.e., grades). However, structuring CBPAR within schools also imposed time constraints, which limited opportunities for outside researchers to develop relationships with youth partners.

4.4.6 Technology- and Arts-based Methods

> "One likely important trait of [participatory video and other visual, participatory methods] is the adaptability to incorporate and make use of the latest technologies and respond to the current context, needs, interests, and skills of youth participants so that they can use the method in their own way" (MacDonald et al., 2015, p. 495).

Like Macdonald and colleagues (quoted above; 2015), many researchers observed the benefits of employing technology- and arts-based methods with youth in CBPAR. More than half the studies used arts-based methods, whereby technology and arts were integrated in data-collection, analysis and KT/A activities. Technology focused on participatory photography and participatory video designs ($n = 15$; Bird-Naytowhow et al., 2017; Bradford et al., 2017; Coppola et al., 2017; Coulthard, 2018; Fletcher & Mullett, 2016; Genuis et al., 2015a; Genuis et al., 2015b; Jardine & James, 2012; Johnston GoodStar, 2017; Liebenberg et al., 2017; MacDonald et al., 2015; Markus, 2012; McHugh et al., 2015; Reich et al., 2017; Riecken et al., 2005; Shea et al., 2013; Stewart et al., 2008; Trout et al., 2018; Weinronk et al., 2018). Seven CBPAR projects employed non-digital arts-based methods, including posters, collages, skits, participatory mapping, rap, dance, skits, identity texts (Bradford et al., 2017; Conrad, 2015; Cooper et al., 2018; Coulthard, 2018; Shea et al., 2013; Skinner & Masuda, 2013; Pollari, 2018).

Technology. Many YRPs were enthusiastic about using technology in CBPAR. One YRP expressed her enthusiasm for using technology in the *Prevention and Preservation* project:

> "I hope I can do this kind of work for the rest of my life. Sharing stories and culture through modern technology is beneficial for future generations." (Fletcher & Mullett, 2016, p. 185).

Youth were typically very accustomed to using electronics, which armed them with pre-developed skills when participating in technology-based methods such as Photovoice and video-making. However, because not all youth possessed means to access expensive technology such as cameras and computers in their personal lives, the chance to gain experience with these tools was a welcome opportunity (Riecken et al., 2005; Stewart et al., 2008). Only in two instances did youth indicate that they did not enjoy using technology as a research method (Shea et al., 2013)

or that they felt uncomfortable being recorded (Liebenberg et al., 2017; Reich et al., 2017). In the former case, the project employed a secondary method so that the YRP was not restricted to photo-taking methods. In the latter case, methods were modified so that the youth was not recorded.

Photovoice and participatory video-making. YRPs responded with enthusiasm when presented with cameras for Photovoice projects. They immediately began taking pictures, which was sometimes problematic as they lost focus of the research topic and preferred to take photos of other things (Shea et al., 2013). Challenges with Photovoice projects were related to accidental loss of YRPs' photos, not having enough screens for YRPs to see their own pictures, and YRPs forgetting to return their cameras, losing them or not taking pictures (Jardine & James, 2012). Photos were used to facilitate dialogue with YRPs regarding their perspectives, and were then used to share knowledge from the project with the community in the form of posters, galleries and photobooks. Markus explained:

> "The visual stories that are told through Photovoice are also a strong fit for facilitating communication among [American Indian] youth, caregivers, and Elders, as they allow stories to be told without verbally speaking the message." (Markus, 2012, p. 117).

Participatory video projects facilitated dialogue between YRPs and people in their communities from different generations, aligning well with oral traditions characteristic of many Indigenous cultures (Fletcher & Mullett, 2016). Dialogue through video-making was an effective engagement strategy for YRPs. Their interest in (and familiarity with) the medium encouraged them to take control of the project and present the research topic in a way that was meaningful to them (Riecken et al, 2005; Stewart et al., 2008). Over the course of the *Prevention and Preservation* project, youth and community members created 73 videos (Fletcher & Mullett, 2016). A community partner for the project explained that using videos as a medium aligned well with Indigenous oral history traditions; "the new oral history is through digital means" (p. 185). A YRP on the project remarked, "[using videos] gives Aboriginal youth a voice. It is a safe way to tell our stories" (p. 185).

CHAPTER 5   DISCUSSION

This scoping review identified 38 unique studies that engaged Indigenous children or youth as decision-makers during the CBPAR process. The sample of included studies explored a range of topics, and the publication of academic articles about these projects increased in frequency in the last five to ten years. Research topics concerning health and well-being were over-represented in the sample, indicating that CBPAR is especially favoured among health researchers. While all youth who participated in these projects were given the opportunity to make decisions at some point during the CBPAR process, the nature and extent of engagement and decision-making ranged considerably, often due to barriers related to age, location, resources, and various other factors. That said, even in studies where decision-making was limited, youth identified wide-ranging positive outcomes for themselves. Common facilitators to youth engagement, decision-making, and positive outcomes for youth were also described in these studies, which along with the barriers, can be a learning tool to enhance future participatory research partnerships with Indigenous youth.

5.1   WHO, WHAT, WHERE, WHEN: THE DISTRIBUTION OF CBPAR WITH INDIGENOUS YOUTH

This section reflects on information gleaned about Research Question 1: *What is the scope and nature of CBPAR projects that involve Indigenous youth as decision-makers in terms of who was involved, when and where research took place, and the research topic?*

Based on this sample of peer-reviewed articles, it appears that CBPAR with Indigenous children and youth is, in fact, becoming more popular. Although articles published in 2000 or later were eligible for inclusion, more than 50% of articles in the sample were published between 2014 and 2018. The sample of CBPAR included a broad representation of projects undertaken across Canada and the US. The distribution of projects generally matched density distribution of Indigenous peoples in Canada and the US, with the exception of Yukon Territory, where no studies were undertaken. CBPAR projects were clustered in Alaska and in southern regions of the Canadian provinces.

Some programs supporting the launch and publication of CBPAR may have contributed to temporal and spatial distribution of studies. The 71st volume of the International Journal of Circumpolar Health, published in 2012, was a special issue devoted to participatory action research. Three studies in the sample were published in this issue (Ford, Rasmus & Allen, 2012; Jardine & James, 2012; Lopez, Sharma, Mekiana & Ctibor, 2012). Most Canadian university institutions sponsoring CBPAR in the sample were located in Southern regions of the Canadian provinces. Furthermore, NEAHR (Network Environments for Aboriginal Health Research) centres were also located in major cities, including Vancouver, Edmonton and Winnipeg, providing further incentive for projects to be undertaken in southern regions. Over-representation of CBPAR in metropolitan hubs, while convenient, may serve to exclude Northern Indigenous communities from opportunities to engage in research on the basis of remoteness. Results indicated that YRPs from remote areas faced additional barriers that inhibited their participation and decision-making in CBPAR, which is further discussed in the section presenting the findings relating to the barriers (Section 5.4.3).

5.2   YOUTH INCLUSION AND DECISION-MAKING

The following sections discuss findings about Research Questions 2 and 3:

> Research Question 2: *What is the nature and extent of youth engagement in CBPAR projects in relation to project objectives, research questions, methods, and/or knowledge translation and action strategies?*

> Research Question 3: *To what extent are Indigenous youth engaged in decision-making around research objectives, questions, methods, and/or knowledge translation and action strategies?*

CBPAR seeks to endow those about whom research is concerned with the power to influence how research processes play out by granting them control to make decisions. Having participants guide the research process is the crux of a participatory orientation. Without the power to make decisions, youth may still be active participants in research, but their power is markedly reduced. Youth participation in CBPAR can take on a variety of forms, some of which are more

comprehensive, and therefore more empowering, than others. As discussed in section 2.4, Hart's (1992) ladder of youth participation identifies the 'highest' level of youth engagement is present in those projects in which youth are empowered to make decisions, and are able to have those decisions executed with support from adult partners.

In the current review, because one of the inclusion criteria was that youth had to be involved as decision-makers during at least one stage of the study, there were no studies in the sample that met the criteria for the lowest levels of youth inclusion based on Hart's ladder of youth participation (i.e., assigned but not informed; see Appendix A for complete ladder). That said, no projects in the sample received a perfect score for youth decision-making across all phases of research, and the sample revealed many different levels of youth engagement in CBPAR. In this regard 13.2% of studies scored 1, 13.2% scored 2, 13.2% scored 3, 18.4% scored 4, 10.5% scored 5, 10.5% scored 6, 15.8% scored 7, 2.6% scored 8, and 2.6% scored 10 out of a possible 12 points.

5.2.1 Getting Youth Involved Early

Studies cited extensive reasons for including youth in decisions from the beginning of research, yet youth decision-making scores were lowest for choosing objectives and questions ($M = 0.66$). Youth know best what research topics in which they are interested in contributing, and have the necessary insight to develop methods that are engaging for other youth. Authors in included articles found that youth-generated measures resonated more with youth participants, improving robustness of generated data (Genuis et al., 2015a; Genuis et al., 2015b; Lopez et al., 2012; Sharma et al., 2013). Similarly, in the *Food Traditions… Passed Down to Us* project, authors also observed that youth participants were more comfortable sharing in interviews conducted by older YRPs from their community (Genuis et al., 2015a; Genuis et al., 2015b). Furthermore, youth decision-making at the beginning of research facilitated their continued interest and ability to contribute as the project progressed. Hart (1992, p.5) theorized:

"If young people do not at least partially design the goals of the project themselves, they are unlikely to demonstrate the great competence that they possess. Involvement fosters motivation, which fosters competence, which in turn fosters motivation for further projects."

Hart's theory about including youth in designing projects was supported in the *Between Two Worlds* project. The project enlisted two groups of youth partners, one of which was less involved in project design than the other. The less-involved group – the Inupiaq youth co-researchers – were less capable of contributing to later research decisions than their non-Indigenous counterparts because they were not included as early on in the project (Trout et al., 2018; Weinronk et al., 2018).

Findings that youth research partners are often under-included in early stages of research align with those found in an integrative review of participatory action research with non-Indigenous child and youth in the US (Shamrova & Cummings, 2017). In their review, Shamrova and Cummings found that children and youth tended be most involved in later stages of research. They cautioned that under-inclusion of youth in early stages undermines their ability to exercise an effect on how research is conducted, and may result in youth voices being manipulated or used as merely decoration.

5.2.2   Devolving Power to Youth: What's Holding Us Back?

Various barriers (discussed in Section 4.4) can render it very difficult, or even impossible, to completely empower youth partners, even when that is the goal. In other cases, the objectives may be to learn about something new and/or to obtain their views on a given topic identified as a priority by others – both of which can be very useful and beneficial. This is especially true for topics in which youth possess little knowledge, as in the *IMALIRIJIIT* project, which was focused on biophysical research (Blangy et al., 2018; Gérin-Lajoie, 2018). While older youth may have the skills and maturity to participate in research teams as full partners on certain projects, the same cannot be said for younger youth and children who do not yet have the cognitive capacity or maturity to make important research decisions (Hart, 1992). To this end, younger YRPs received less decision-making power in many projects.

While some projects did not score high for decision-making due to age or other factors (discussed further in Section 4.4), it should be emphasized that these studies still reported having included young people extensively and respectfully. For example, the youngest group of youth involved in the sample were pre-school aged co-researchers in *the Early Authors Program project* (Coulthard, 2018). In this case, youth were referred to as co-researchers, and age-appropriate strategies were employed to facilitate their inclusion as directors of project activities. Youth co-researchers were unable to make choices about research objectives, and in fact, Coulthard stated that they were not always aware of the fact that they were meeting for the purpose of creating a book for research. That said, it was clear that these young children were engaged in the activities taking place. This demonstrates a key ethical imperative in research with young people. Because youth participants may be unaware of their position in research, lead researchers have a higher responsibility to protect their fair treatment in research processes. In the case of CBPAR, this means protecting youths' ability to make choices about the project. In Coulthard's case, she protected child co-researchers' role as directors by following their lead. For example, when one child started colouring on top of a picture taken for his photobook, Coulthard did not interject (stop him from 'ruining' the photo). Instead she asked him why he was doing that and learned that the youth co-researcher preferred to be wearing a blue shirt in his photo; the child continued colouring as he wished.

There are tangible reasons why including youth in earliest phases of research is challenging. Choosing research objectives can be a high-stakes activity considering that research is expensive and requires a large time commitment from university and community partners. University researchers and community leaders may not be able to afford to offer youth partners carte blanche to choose research objectives, given their own obligations (i.e., community development goals or career advancement); they may also be restricted by funding priorities of their home institutions. In addition, I know from personal experience that community organizations and leadership often have established priorities that must be reflected in research in order for them to justify devoting time and resources to a project.

Many projects in this scoping review made reasonable compromises by recruiting youth after research objectives were selected (often with input from community leaders) and delegating the

process of identifying specific research questions to YRPs. While reducing youth decision-making power in this way places limits on their potential to direct the outcomes of research, it may be a reasonable compromise, especially in cases where YRPs are young, or when research priorities identified by community leadership are the cause for research.

5.2.3 Participatory *Methodologies* versus Participatory *Methods*

As the scoping review progressed, a division emerged between studies that employed an all-encompassing participatory methodology used throughout the different stages of the research process, versus those that employed participatory methods for only a certain portion of the project. A complete participatory *methodology* embodies key features of CBPAR (i.e., shared decision-making, collective reflection, and action based on new knowledge); whereas participatory *methods* are tools for engaging youth at one stage, usually during data collection. In Hart's (1992) typology, participatory methods would often encompass the 4th rung of the ladder and 1st rung of child-participation, in which youth play roles that were pre-determined by adults. Merely integrating participatory methods may not meet expectations of CBPAR theory because youth partners are not included extensively enough for research processes to reflect their interests and ideas. Therefore, it is a lower-level form of youth-engaged CBPAR, unless it is augmented with other forms of meaningful youth engagement, as was seen in some projects in the sample (Coppola, Dimler, Letendre & McHugh, 2017; Genuis et al., 2015a; Genuis et al., 2015b; Liebenberg, Sylliboy, Davis-Ward & Vincent, 2017; Reich et al., 2017; Riecken, Strong-Wilson, Conibear, Michel & Riecken, 2005; Skinner & Masuda, 2013; Stewart, Riecken, Scott, Tanaka & Riecken, 2008; Trout, Wexler & Moses, 2018; Weinronk et al., 2018).

5.2.4 Youth Inclusion in Analysis

Unlike what was discovered by Shamrova and Cummings in their review of participatory action research with children and youth (2017), studies in this scoping review described highest levels of youth decision-making during analysis. Although the spike in decision-making at this stage was not anticipated, it became clear throughout the review that youth decision-making about analysis was built into designs that used participatory methods rather than full participatory

orientations. Designs that integrated participatory methods at one stage tended to present reduced youth participation at other stages. Because Photovoice was such a common method in this review, the nature of Photovoice research very likely exerted a strong influence on mean youth participation scores. Photovoice is a participatory data-collection strategy that facilitates youth decision-making during analysis. YRPs in Photovoice projects were often not included beyond showing up for Photovoice activities (Bradford et al., 2017; Johnston GoodStar, 2010; McHugh et al., 2015; Shea et al., 2013). Photovoice participants helped interpret the meaning of data via photo-facilitated conversations, after which their initial analyses formed the basis of thematic coding frameworks. To this end, many studies that employed Photovoice methods received high youth decision-making scores during analysis.

5.2.5 Authorship of Research Findings from CBPAR with Indigenous Youth

Although it is impossible to make objective conclusions about researchers' subjective opinions of YRPs, tone and language in publications communicated extensively about how university researchers viewed youth partners. Subjectively, the tone of writing in some articles clearly communicated authors' genuine appreciation for youth partners. Other articles presented YRP participation mostly in terms of a benefit for youth partners. Language matters in CBPAR, as it is infused with power and political context. For example, many papers chose to refer to youth as co-researchers, implying equality of position between youth and adults.

Too often, youths' opinions are not recognized as important to research matters that affect them (Caraballo, Lozenski, Lyiscott & Morrell, 2017). This is the exact problem that CBPAR has sought to redress by including youth, and positioning them as experts of their own experiences. YRPs dedicate time, energy, knowledge, and perspective to CBPAR, and for that, they must be acknowledged (Reich et al., 2017). In academia, relative power or contribution to research is recognized by order of authors in publications, with the first listed author having contributed the most, and so on. There are lists of publications devoted to discussing guiding principles for determining authorship (Eggert, 2011; Fine & Kurdek, 1993; Osborne & Holland, 2009). Yet, unlike scholastic experts on CBPAR projects (i.e., university researchers), youth partners are seldom named as authors. While 21 studies in the sample for this review identified youth

partners as co-researchers in research, only 6 named youth co-researchers as authors in the publication. Eighteen studies referenced contributions of youth partners in the acknowledgments. Reich and colleagues (2017) observed that dominant research practices discourage naming research participants as authors in order to protect their anonymity, regardless of whether or not participants are also co-researchers and wish to be named. Regardless of dominant views in projects like *Spaces and Places*, YRPs were named as authors to acknowledge their contributions to the project. After all, youth and non-youth research partners hold equally important positions, assuming that CBPAR is executed in practice as it is described in theory.

5.3 OUTCOMES FOR INDIGENOUS YOUTH PARTNERS IN CBPAR

The following sections relate to Research Question 5: *How do youth feel about being involved as research partners and decision-makers in CBPAR, and do they experience any personal outcomes as a result of their participation?*

Youth outcomes in this scoping review show some similarities with what has been observed among non-Indigenous youth engaged in CBPAR in a 2017 integrative review of participatory action research with children and youth (Shamrova & Cummings, 2017). Youth in both reviews demonstrated increased practical knowledge of research topics, awareness of social justice, and competencies related to school and work (i.e., making presentations and participating in intellectual conversation). Youth in both reviews also took on leadership roles, and indicated increased perceived ability to be successful in future endeavors. In this review, YRPs acted on new motivations by adopting healthier behaviours (Riecken et al., 2005; Stewart et al., 2008), pursuing post-secondary education (Jensen, 2012), and taking on personal projects above and beyond those prescribed in the CBPAR project at hand (Pollari, 2018).

YRPs expressed that participating in CBPAR changed their perspectives about their community and its residents. This aligns with Shamrova and Cummings' (2017) finding that CBPAR can be a forum for strengthening youths' sense of connectedness and belonging in their communities. Beyond feeling more connected to their communities, YRPs in included studies also described positive outcomes for their cultural identities. Even research topics that did not specifically focus

on Indigenous culture served to reinforce cultural identity when traditional knowledge and contemporary realities of Indigenous culture were recognized.

Like in Shamrova and Cummings' (2017) integrative review of youth participation in CBPAR, authors in this review acknowledged complex interactions between youth-engagement, inter-researcher relationships, project designs, and YRPs' affective, relational, behavioural, and academic outcomes.

5.3.1 Outcomes Related to Decision-Making

Some youth outcomes were dependent on decision-making in CBPAR. Youth who indicated that they felt valued in CBPAR attributed this feeling to contributing to research conversations and decisions. It was important for them to realize that their opinions and ideas mattered to the project. These conversations affirmed youths' expertise about their own lived experiences and communities. YRPs who had extensive roles in directing research experienced a sense of ownership over the project, which promoted pride. They demonstrated motivation to stimulate change in their community and in their own lives, using the skills they acquired throughout research. YRPs demonstrated a number of outcomes that relate to empowerment. Articles described youth assuming responsibility and leadership in the project, as they embraced their role as teachers to outsider research partners, for example, by touring the research team around their community and explaining the significance of various points of interest on the tour (Pollari, 2018).

5.3.2 Youth Praxis

Paulo Freire's writings consider ways to engage marginalized populations in an inquiry that enabled their liberation. He theorized that community partners could not become agents of change until they developed critical consciousness of forces that oppress them (Minkler & Wallerstein, 2008). According to Freire, this 'conscientization' occurs via dialogue among community research partners, which facilitates personal engagement with knowledge. The common goal of research inquiry and conscientization is 'praxis', which refers to action based on

knowledge. Individuals are transformed through repetitive cycles of listening (theory), dialogue (reflection), and acting on new understandings (refer to Figure 8). They encounter barriers to mobilizing knowledge, which further nurtures perspective and modified approaches to generating change. Because development of praxis requires active engagement with knowledge and choices about methods of mobilizing new understandings, it is inherently linked to youths' ability to make decisions.

Figure 8   This cycle depicts the interactions between theory, reflection and action that encompass praxis, as theorized by Paulo Freire. The image was sourced from: http://caminaproject.weebly.com/what-do-we-mean-by-critical-education.html

Authors of included studies spoke to conscientization among YRPs, explicitly in eight studies (Conrad, 2015; Fletcher & Mullett, 2016; Genuis et al., 2015a; Genuis et al., 2015b; Jardine & James, 2012; Johnston Goodstar, 2009; Pollari, 2018; Riecken et al., 2005; Skinner & Masuda, 2013; Stewart et al., 2008). YRPs developed critical consciousness about their communities, their identity as young Indigenous people, and the nature of structural forces at play in their lives. Through facilitated conversations, youth demonstrated an improved ability to critically examine their choices based on expanded knowledge of the research topic, as well as their own beliefs. For example, youth co-researchers Jardine and James (2012) became more aware of shared cognitive dissonance between their smoking behaviours and their opinion on smoking. While most youth understood health implications of smoking, the majority of youth co-researchers and their peers smoked. Becoming conscious of dissonance between their beliefs and behaviours encompasses critical consciousness that is necessary for praxis (changed behaviours) to occur. YRPs who developed critical consciousness were then empowered to mobilize their new

understandings in KT/A to make change in their communities. Excluding youth from making choices about KT/A would disrupt Freire's cycle and prevent youth from performing praxis.

5.3.3 Some Outcomes are Unrelated to Decision-Making

Youth demonstrated outcomes that were not contingent upon them being prominent decision-makers. Youth expressed feeling more confident in themselves and in their abilities after participating in research activities, which promoted their self-pride (if at lower levels than those who felt ownership over project outcomes). Whether or not youth made decisions about research, doing, listening and observing promoted pride for their community and culture if those topics were included in research questions. YRPs who participated in collecting and disseminating data also developed useful skills. In *IMALIRIJIIT*, youth-performed water tests resulted in scores comparable to those performed with a machine, indicating that youth were capable of executing methods effectively (Blangy et al., 2018; Gérin-Lajoie et al., 2018). YRPs also noted feeling more confident as a result of contributing to knowledge-sharing activities such as conference presentations, which were not contingent on them making decisions about KT/A.

Beyond outcomes for YRPs, youth-led activities promoted greater community interest in research. Community members were curious about what youth had accomplished, which encouraged them to actively engage in knowledge translation activities (Jardine & James, 2012; MacDonald et al., 2015).

While it seems clear that providing Indigenous youth with opportunities to make decisions about research objectives, questions, and methods do appear to promote investment in research projects, this does not always ensure full youth engagement, as other factors can interfere, even when youth decision-making is made a priority. In one instance, YRPs elected to use Photovoice methods to collect data, but then none of them followed through with it. They explained that it was a good idea because it was a way of collecting data without talking or writing, but stated that they were too busy to follow through (Coppola et al., 2017). This instance suggests that the time and effort it takes to perform participatory research processes may sometimes be too burdensome on youth and their families. An integrative review of participatory action research with children and youth found that some youth participants had less time to spend with family and complete

chores as a result of the time commitments associated with the research (Shamrova & Cummings, 2017). Such adverse implications of youth participation in CBPAR were not described by articles included in this scoping review.

5.4   BARRIERS AND FACILITATORS FOR ENGAGING YOUTH

The following sections relate to Research Question 5: *What are common challenges and facilitators for engaging Indigenous youth as research partners and decision-makers in CBPAR?*

CBPAR is not easy, nor does it occur without resistance or difficulty (Minkler & Wallerstein, 2008). Authors referenced key challenges to CBPAR processes, including attrition and inconsistent participation of YRPs, as well as university barriers to engaging community youth early on. However, studies included in this review did not report extensively on risks or negative outcomes experienced by YRPs. In a few instances, authors disclosed minor misunderstandings rooted in cultural differences among research team members, which were always resolved. Cross-cultural CBPAR projects are known to face major challenges associated with different cultural communication styles and worldviews (see, for example, Dutheil, Tester & Konek, 2015; Roberts & Jette, 2016). Therefore, we can speculate that larger conversations about tensions and challenges in CBPAR partnerships with Indigenous youth exist, but that they are not represented in scholarly publications.

5.4.1   Youth as Experts

Ideally, YRPs will take on dual roles as learners and teachers in CBPAR. When youths' own lived experiences serve as expertise relevant to knowledge generation, they become teachers for adult research partners. Almost all projects in the sample explored issues about which youth had lived experience to draw from, such as mental health, physical safety, and cultural identity.

Genuis and colleagues (2015a) suggested that development of critical consciousness and praxis among YRPs was contingent on being positioned as experts of their own lives and community. This position was affirmed by positive reception to youths' input, encouraging them to be agents

of positive change, which YRPs on the project achieved by advocating for health and cultural food practices.

Four projects stood out in the sample as unrelated to youth's personal expertise: the first focused on Elders' views of tobacco use (Margalit et al., 2013); the second addressed archaeology (Jensen, 2012); the third concentrated on community planning (Pollari, 2018); and the last emphasized environmental monitoring (Blangy et al., 2018; Gérin-Lajoie et al., 2018). Participatory potential of research is limited for quantitative and biophysical projects; therefore, it is unsurprising that such research topics were under-represented in the sample, and that all youth decision-making scores in these projects were in the lowest quartile.

Projects highlighting the youth who possess little to no expertise are antithetical to traditional participatory research pedagogy, which promotes co-learning between outsider and insider researchers. In biophysical projects, YRPs do not possess as much personal knowledge to exchange with academic research partners, and therefore, their roles necessarily shift from co-directors of research to learners. With this change, comes the locus of power being shifted back to university researchers. Knowledge is power (Wallerstein & Duran, 2008) and can serve to disempower others if the more knowledgeable party 'talks down' to youth partners. That does not go to say that youth cannot make valuable contributions to research if they are not knowledgeable about the topic. Margalit and colleagues (2013) noted that YRPs play critical roles as cultural brokers during research with Lakota Elders. Community members expressed support for youth engagement on these projects because they presented unique learning opportunities (Blangy et al., 2018; Gérin-Lajoie et al., 2018; Jensen, 2012; Pollari, 2018). Indeed, while opportunities to make decisions were fewer, opportunities for youth to develop relevant skills in research and knowledge about the environment were plentiful. To this end, while limited opportunity for decision-making in research does undermine key characteristics of CBPAR, the review found that it did not preclude youth having positive experiences or reaping benefits from participating as research partners.

5.4.2 Relationships between Research Partners

Studies overwhelmingly emphasized the importance of building respectful, trusting, and personal relationships between university-based and youth research partners. While it is entirely conceivable that research may be executed by youth alone, adults will be involved in the vast majority of cases. Hart (1992) notes that the importance of adult involvement in youth participatory research should not be underestimated, as adult involvement is just as important for supporting and guiding youth as it is for the lessons learned by adults.

'Building authentic relationships' is commonplace in the CBPAR vernacular. Minkler and Wallerstein (2008) describe authentic participation as a "developmental, emergent process that requires nurturing beyond the initial intentions" (p. 30). There is no replicable formula for developing authentic partnerships, as they will appear different in every context. In this scoping review, development of authentic research relationships was fostered by time spent together, willingness to learn about youth outside of research, integration of local culture and traditional knowledge (where requested by the community), and demonstrated respect for youth and their ideas.

Many authors concluded that creating time and space for open dialogue with YRPs was integral for supporting growth of a research partnership, mirroring Freire's concept of dialogic space. Dialogical exchange of knowledge between community and outside researchers is integral to generation of knowledge in CBPAR (Caraballo et al., 2017). Authors of studies included in this review promoted dialogue exchange with YRPs by establishing consistent, familiar and safe spaces for research meetings. What we did not anticipate was that many authors would identify sharing of food as an initiator of dialogue among research partners. Authors noted that sharing food reduced the perceived formality of research meetings, thus putting everyone at ease. Food is a focal point in many cultures, and it is certainly central among many Indigenous cultures. Traditionally, food connected Indigenous peoples to the land on which they lived (Native Women's Association of Canada, 2018). Complex systems of food gathering, preparation, and ceremonial sharing were built into Indigenous cultures. Although traditional food sources may not be as accessible today, shared preparation and consumption of foods still brings people

together and carries cultural significance. Therefore, sharing of foods in Indigenous research settings may pay tribute to cultural values and create an environment conducive to open discussion and development of personal relationships between researchers. Fast and colleagues (2017) noted that the offering of traditional foods would be preferable in many communities; although this is not always possible, sharing non-traditional foods can fill a similar role.

5.4.3 Structural Barriers

Over-representation of CBPAR in metropolitan hubs, while convenient, may serve to exclude Northern Indigenous communities from opportunities to engage in research on the basis of remoteness. Findings indicated that YRPs from remote areas faced additional barriers that inhibited their participation and decision-making in CBPAR. Illustrative of this were the discordant contributions of Inupiaq youth co-researchers compared to youth co-researchers from American universities in the *Beyond Two Worlds* project (Trout, Wexler & Moses, 2018; Weinronk et al., 2018). Due to their remote location, Inupiaq youth co-researchers did not enjoy the same opportunities to learn about CBPAR methods before research started, hindering their ability to make informed suggestions about how research should be done in their community. Later on, Inupiaq youth co-researchers were excluded from major analysis activities because the studies were completed at universities located in the lower 48 states of the US.

CBPAR researchers partnering with remote Indigenous communities should plan to devote more funding and time to overcoming barriers imposed by remoteness. While some authors found that using teleconferencing technology for remote meetings was successful, others found this to be an ineffective way to communicate. Authors reported that travelling to remote communities was generally a more effective way to facilitate communication.

5.4.4 Methods Built for Indigenous Youth

Freire employed 'codes' to facilitate critical dialogue among community partners (Minkler & Wallerstein, 2008). Codes include any physical representation of research themes generated by participants, such as photos or art that were used to catalyze discussion about key issues. The

concept of codes has been applied and re-imagined by numerous researchers and theorists, a collection of whom were identified as inspiration for designs of studies included in this scoping review.

Some CBPAR practitioners developed participatory research frameworks specific to use in Indigenous settings. For example, Trout and colleagues (2018) employed a framework called Intergenerational Dialogue Exchange and Action (IDEA) - a participatory action research approach developed in partnership between university researchers and the same Alaska Native community previously discussed (Wexler, 2011). IDEA engages community members in knowledge generation through intergenerational storytelling. YRPs in IDEA engage in dialogue with local adults and Elders, and synthesize what they learned from videos, or from an alternative communication medium. Many Indigenous communities boast strong oral history traditions. All types of life lessons and cultural teachings were passed down through generations by way of storytelling. Research designs that galvanize traditional models of knowledge-sharing serve to reinforce traditional pathways of knowledge transmission and cross-age relationships (Wexler, 2011). Therefore, intergenerational dialogue may hold heightened meaning to Indigenous YRPs, thus promoting their conscientization through research-facilitated discussion.

Many projects in the sample demonstrated a preference for using arts and technology-based 'codes' to facilitate knowledge generation and discussion among YCRs. This was observed in the marked prevalence of participatory photography projects, as well as in diverse iterations of participatory video and other forms of art-making. Authors identified that today's youth are familiar with camera technologies, which makes participatory photos and videos an accessible avenue for knowledge-generation (Riecken et al., 2005; Stewart et al., 2008). YRPs can take ownership of individual arts- and technology-based projects to apply their personal creative vision and research interests. For example, each YRP in the *Right to a Healthy City* project conceived a personal project using an artistic medium of their choice, along with the guidance of a local Indigenous artist in the discipline (Skinner & Masuda, 2013). In addition to creating opportunity to work with video technology, participatory video projects in this review facilitated intergenerational dialogue, similar to what is described in the IDEA process. In the *Prevention and Preservation* project, digital stories (a form of participatory video) facilitated

intergenerational interactions, affording YRPs an opportunity to reflect critically on historical, cultural, and spiritual ideas of health (Fletcher & Mullett, 2016).

CHAPTER 6   CONCLUSIONS

6.1 STRENGTHS AND LIMITATIONS

6.1.1 Strengths

Strengths of this study include use of a comprehensive search strategy that included extensive terms for CBPAR and related approaches, and Indigenous groups in Canada and the US. The extensiveness of the strategy exceeds those employed in previous evidence syntheses of CBPAR with children and youth. Although eligibility criteria did not discriminate against studies that employed participatory approaches, it did not explicitly name the approach as CBPAR. These measures allowed for a broad selection of CBPAR studies to arise in the initial scan, lending to an inclusive view of CBPAR with Indigenous youth in Canada and the US.

Another notable strength is the fact that this review engaged a diverse team of Indigenous and non-Indigenous researchers with experience in facilitating participatory research projects with Indigenous youth across Canada. The combination of our lived and professional experiences helped ensure that the methods were relevant to the field of study. The bulk of this scoping review was conceived and executed by Hackett, as is traditional in Master's research. However, including insights from other researchers fortified the validity of the methods and findings of this review.

6.1.2 Limitations

The sample of CBPAR included in this scoping review was limited to those projects that included Indigenous youth as decision-makers during at least one stage of the research process. Studies describing research that claimed to be CBPAR, but that did not include youth partners as decision-makers at any point, were excluded. Furthermore, while the search strategy included expansive terms relating to participatory research, any project that did include Indigenous youth as decision-makers in research, but did not use a term included in the search strategy, would not have been identified in this review.

This scoping review was also subject to limitations associated with time constraints inherent in Hackett's degree path. After establishing that 45 scholarly sources were available for extraction, Hackett determined that time constraints would preclude the opportunity to include grey literature in the review. Before making this decision, half of a systematic grey literature search had been completed, yielding 28 sources of possible relevance. Examining and synthesizing the mass of information from both scholastic and grey sources was beyond the capacity of a single Master's research project. However, a grey literature search will be considered to supplement findings of the current study in the event that it continues beyond the completion of Hackett's degree. Grey literature are an important source of information, especially with perspectives that are under-represented in academia, and with information that contradicts findings in the academic literature. Grey sources are often written by community members, and may be more likely to critique research projects due to less onerous editing processes, compared to peer-reviewed articles in academic journals.

Including grey literature in evidence syntheses is known to mitigate against the effects of publication bias (Godin, Stapleton, Kirkpatrick, Hanning & Leatherdale, 2015), which refers to preferential publishing of studies with positive results; this skews the general impression of a field of study (Bax & Moons, 2011). In the case of this scoping review, exclusively including peer-reviewed literature may yield an overly-positive impression CBPAR. Therefore, future assessments of CBPAR with Indigenous youth include grey literature (with or without scholarly literature) in order to help develop a comprehensive and less biased understanding of the topic.

Furthermore, there is much more to be said about CBPAR than what is published in academic articles. Data extraction in this review recorded information that was exactly, or as close as possible, to the data presented in publications. Authors referenced additional publications when directed in articles, and reached out to corresponding authors on three occasions when critical eligibility criteria were not made clear. Otherwise, if information was missing, nothing was recorded. As a result, the extraction cannot be assumed to completely capture true-to-life details on each CBPAR project due to oversights in writing, and limitations on allowable size of

scholarly publications. Had time allowed, validity of extractions could be increased by sending extraction forms from each study directly to corresponding authors to be checked for accuracy.

Direct communication with authors would yield even more comprehensive information. Earliest iterations of this scoping review design included outreach to CBPAR authors to seek their participation in a structured questionnaire about youth inclusion in research. Direct contact with authors from Indigenous communities could validate or discredit how research partnerships with youth are presented in academic articles. Completing such an exercise would constitute a study in and of itself, which is the reason it was deemed unrealistic in the current project. Nevertheless, such a study would make a useful contribution to our shared understanding of youth partnerships in CBPAR.

Finally, findings of this review were subject to limitations of quantitative methods and human error. Youth decision-making was scored on a scale of three, resulting in great variation, even within point boundaries. In other words, two studies that received a '2' for youth decision-making about objectives, and questions may have included youth in very various ways. Furthermore, scoring did not account for the number of youth engaged as research partners. Authors determined that presence of more YRPs does not necessarily equate with more comprehensive inclusion. Nevertheless, point boundaries therefore did not distinguish between CBPAR projects that include groups of one or 20 YRPs in the same model of inclusion.

A thematic analysis framework was developed collaboratively between Hackett and Moreash. The two researchers also applied codes to approximately two thirds of extraction data, and coding was completed by Hackett alone. Validity of coding could be improved by including a second independent coder who may 'catch' missing codes in the data, and mitigate personal bias inadvertently projected in the coding process.

6.2 SUMMARY

This scoping review identified an impressive array of CBPAR projects in Canada and the US that included Indigenous youth as decision-makers at some point throughout the process. Studies

in this review echoed youth outcomes obtained from previous reviews of participatory research with youth (Shamrova & Cummings, 2017). YRPs in included studies demonstrated increased confidence, new skills, motivation, and a sense of connection to community as a result of participating in CBPAR. Unlike in the previous review, Indigenous YRPs in this review identified distinct positive outcomes related to their cultural identities, including pride for being Indigenous, and appreciation for how culture promotes wellness.

Findings of this review support widely-held beliefs that trusting and respectful relationships between community (in this case, Indigenous youth) and university research partners is fundamental to the success of CBPAR. Authors of included studies emphasized the time it takes to develop effective relationships with Indigenous research partners. They suggested that researchers spend informal 'fun' time with youth partners to nurture relationship development. Enlisting the help of local adults as research coordinators or gatekeepers may help bridge the divide between outside researchers and YRPs, and could provide insight into the community that is crucial for planning research activities. Some projects in this review also benefited from employing culturally-grounded methods, when requested by the community. In some cases, integrating traditional values and ceremony endowed research processes with additional spiritual meaning. However, authors recognized that traditional Indigenous culture is not necessarily relevant for Indigenous youth, depending on their own cultural orientations. The choice to integrate culturally-grounded methods should be made by local research partners (youth partners, if possible). Furthermore, researchers should recognize structural barriers to youths' participation in research and offer accommodations to help overcome them, such as fair payment for YPRs' time and transportation to and from remote areas.

Many projects described extensive inclusion of Indigenous youth throughout research; however, the vast majority of studies neglected to include youth in the earliest stages of research (i.e., identifying questions and methods). Research that is not guided by youth voices from the beginning is less likely to align with interests of YRPs and expose them to key processes that promote positive personal outcomes. While federal and academic institutions demonstrate growing support for participatory research strategies, studies in this review suggest that theoretical support for CBPAR is not upheld in reality. Academic institutions, funding agencies,

and individuals need to critically examine inflexible and positivist research standards if CBPAR is to be permitted to take place as intended by communities.

6.3 IMPLICATIONS

The findings of this review will be disseminated using multiple avenues to maximize the chances that they may be applied in participatory research practices. Manuscripts will be submitted for publication in academic journals with input from co-investigators involved in the review. Hackett will also produce summary materials that are accessible outside of the academic realm. These will include a double-sided information sheet with key findings and recommendations for scholars and CBPAR facilitators working with Indigenous youth. Similar content will be communicated in a short, animated video that will be available to the public on a video-sharing platform such as YouTube or Vimeo.

We hope that the findings in this review can be used to educate researchers about CBPAR designs with the intention of promoting positive and fulfilling research partnerships with Indigenous youth across Canada and the US.

Other researchers and communities may contribute to growth of CBPAR by addressing key gaps exposed in this review, such as reporting on adverse experiences, exploring non-academic data sources, including youth early on, and assessing youth research partnerships.

Few studies discussed reported on risks and adverse outcomes experienced by YRPs. Reporting adverse outcomes is an act of humility in research, and accountability to research partners who may have been wronged. Unfortunately, a competitive academic climate dissuades university researchers from publishing negative results or implications. Researchers should commit to including commentary on challenges and tensions that arose in CBPAR with Indigenous youth to demonstrate accountability and assist learning among those seeking to facilitate CBPAR in other communities. Such reporting can be integrated into larger research articles, or published as discrete reflective discussions (see, for example Roberts & Jette, 2016; Dutheil, Tester & Konek, 2013).

The current review was limited to sources published in academic journals. Future research about CBPAR with Indigenous youth would benefit from referencing grey literature, which often includes community reports and first-hand accounts of community researchers. There is much more to be said about CBPAR than what is written in academic articles. Direct communication with Indigenous communities and university researchers involved in CBPAR would lend to a much more holistic view of the research partnerships with Indigenous youth (see, for example, Castleden, Sloan Morgan, & Lamb, 2012).

Given what was discovered in this scoping review, researchers planning on facilitating CBPAR with Indigenous youth should consider engaging youth partners as early on in the process as possible. Research that is guided by youth voices from the beginning is more likely to align with their personal expertise and expose them to key processes that promote positive personal outcomes. Furthermore, CBPAR designs should build in self-assessment of partnerships with Indigenous youth. Of 38 studies reviewed, only 18 reported on the experiences and outcomes of youth research partners. Given that two thirds of included studies did not report on experiences and outcomes of Indigenous YRPs in CBPAR, it is not yet possible to conclusively determine if dominant CBPAR strategies are indeed best practice for research with Indigenous youth. Given historical malpractice in research with Indigenous populations and increasing use of CBPAR with Indigenous youth, it is imperative that we examine our practices to ensure that research is being conducted effectively and positively.

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[2] More information about sources of this quote, originally attributed to Lila Watson, can be found at http://unnecessaryevils.blogspot.com/2008/11/attributing-words.html

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APPENDIX A   Hart's Ladder of Child Participation

Children have the ideas, set up the project, and invite adults to join with them in making decisions.

8. Child-initiated, shared decisions with adults

Children have the initial idea and decide how the project is to be carried out. Adults are available but do not take charge.

7. Child-initiated and directed

Adults have the initial idea but children are involved in every step of the planning and implementation. Not only are their views considered, but they are also involved in taking the decisions.

6. Adult-initiated, shared decisions with children

The project is designed and run by adults but children are consulted. They have a full understanding of the process and their opinions are taken seriously.

5. Consulted and informed

Adults decide on the project and children volunteer for it. The children understand the project, and know who decided they should be involved and why. Adults respect their views.

4. Assigned but informed

Degrees of Participation

3. Tokenism

Children are asked to say what they think about an issue but have little or no choice about the way they express those views or the scope of the ideas they can express.

2. Decoration

Children take part in an event, e.g. by singing, dancing or wearing T-shirts with logos on, but they do not really understand the issues.

1. Manipulation

Children do or say what adults suggest they do, but have no real understanding of the issues, OR children are asked what they think, adults use some of their ideas but do not tell them what influence they have had on the final decision.

Non-participation

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APPENDIX B   Search Strategy used for PsycINFO February 19, 2019

Search ID#	Search Terms	
S10	((S1 OR S2) AND (S4 OR S5)) AND (S6 OR S7)	777
S9	(S1 OR S2) AND (S4 OR S5)	13761
S8	S1 OR S2	37324
S7	DE "Action Research"	2333
S6	((participat* N2 (inquiry OR research OR science OR study OR studies)) OR (consumer* N2 (inquiry OR research OR science OR study OR studies)) OR (community N2 (inquiry OR research OR science OR study OR studies)) OR (action N2 (inquiry OR research OR science OR study OR studies)))	95060
S5	((youth OR teen* OR adolescen* OR child* OR girl* OR boy*) OR (young* N2 (person* OR people OR adult* OR man OR men OR woman OR women)) OR ("high school*" OR youngster OR "school age*") OR (student* N2 (college* OR universit* OR secondary OR "post-secondary")))	1435440
S4	(((DE "Adolescent Attitudes") AND (DE "Adolescent Behavior" OR DE "Adolescent Health")) OR (DE "Adolescent Psychology")) AND (DE "Child Attitudes" OR DE "Child Behavior")	99
S3	teen	10523
S2	(aboriginal* 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 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 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" OR 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 nunatsiavut OR nunavut OR nunavik OR nutaqqavut OR "ouje-bougoumou" OR shubenacadie OR "slave lake" OR "subarctic ontario" OR wikwemikong OR "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)	34762
S1	DE "Hawaii Natives" OR DE "Alaska Natives" OR DE "American Indians" OR DE "Inuit"	7208

APPENDIX C   Complete Thematic Coding Framework

Research Design Logistics

L1 data collection strategies
- L1.1 interviews
- L1.2 photovoice/postervoice & identity texts
  - L1.2.1 SHOWeD technique (= L3.1.3)
- L1.3 talking/sharing circles
  - L1.3.1 focus groups
- L1.4 survey/questionnaire
- L1.5 digital stories
  - => A2.2
- L1.6 field notes & journal entries
  - this often included logs of conversations/meetings
- L1.7 other
  - free listing; community mapping; participatory workshops (charm bracelets, whom am I)
- L1.8 Arts-based
  - poster, collage, skits
- L1.9 youth collect data

L2 participatory methodology
- L2.1 CBPAR
- L2.2 PAR
- L2.3 CBR
  - Community-driven
- L2.4 CBPR
  - IDEA; participatory community mapping; participatory video
- L2.5 other
  - community-based environmental monitoring; indigenous pedagogy of place; Critical hip hop pedagogy
- L2.6 Indigenous/ decolonizing methodologies

L3 Analysis strategy
- L3.1 youth-involved workshop/structured youth contribution
  - L3.1.1 Body-mapping, community mapping
  - L3.1.2 SHOWeD technique (=L1.2.1)
- L3.2 outsider-independent
- L3.3 two-eyed seeing

L4 KT and action strategy
- L4.1 art
  - Mural, video, podcast, photo exhibitions, travelling video training, skits, rap, zines
- L4.2 youth presentations
  - school (= L4.2)
  - Community presentation/celebration (= L4.9)
    - Community/leaders praise; sharing technology skills in community ; youth panel; community mental health workshop
  - steering local committees (= L4.5)
  - academic/conference (= L4.10)
    - Influencing popular opinions of Native youth
- L4.3 Photovoice photobook
- L4.4 media coverage
  - educating service providers (L4.7)
- L4.6 community service work
- L4.8 other
  - territory map, research manuals, Facebook page
- L4.11 sustainable action

L5 youth/ community engagement strategy
- L5.1 structured within schools/ existing programs
- L5.2 community workshops
- L5.3 field trips/ field work
  - L5.3.1 involvement with physical place/ indigenous teachings about environment (not necessarily directly about the research)
- L5.4 personal recruitment
  - snowball sampling, purposive, word-of-mouth, etc
- L5.5 train the trainer
- L5.6 intergenerational involvement / dialogue
  - L5.6.1 Elders
  - L4.6.2 young adults
- L5.7 steering committees
- L5.8 youth co-researchers
  - L5.8.1 pre-field training
    - photography, data collection, ethics
- L5.10 shared responsibility among team members (including youth/honouring and respecting unique skills/expertise)
  - L5.10.1 community/youth-defined extent of participation
  - Youth decide how much they want to do; egalitarian relationships
- L5.11 digital technology
  - L5.11.1 communication tool; engagement style; youth-friendly (disposable, casing)
    - FB, webinar, text, phone, social media
- L5.12 non-judgmental/ supportive
- L5.13 youth directed methods
- L5.14 youth directed goal/ aims
  - L5.14.1 Community-defined/conceived project
- L5.15 local coordinator/gatekeeper/youth or cultural broker
  - In 2 cases, YCRs are the cultural brokers
- L5.16 sharing of food/recreation
  - Demonstration of appreciation for youth's contributions (tobacco, payment, gifts, celebrations, certificates)
- L5.17 including tradition/ceremony/culture
  - Youth decide if they want to participate or not; creates safe and meaningful engagement

L6 validity strategy
- L6.1 triangulation. multiple sources
- L6.2 young adult involvement
- L6.3 Member-checking

L7 Reflection strategy
- L7.1 reflective paper
- L7.2 systematic method
  - Socratic wheel
- L7.3 interviews to reflect
- L7.4 member checking
- L7.5 survey etc.
- L7.6 debrief/ focus groups

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Affective Outcomes

A5 youth prefer to take a positive approach

A1 feelings
- A1.1 self-confidence/ esteem
- A1.2 pride
  - of the project
  - of self
  - of the community
  - => L4.10
- A1.3 "I am valued"
  - feeling seen/heard
  - my community is seen/valued
  - => L5.10
- A1.4 rewarding/ accomplishment
  - [-] A1.4.1 unequal division of rewards among team members
- A1.5 empowered
  - leadership, role model, commitment
- A1.6 sense of responsibility
  - => L5.8
  - [-] A1.6.1 did not achieve empowerment/ leadership
- A1.7 comfortable
- A1.8 "Hey! I want to be a part of that!"
  - enjoyment/ excitement; want to stay involved
- A1.9 self-efficacy
- A1.10 interested/ engaged
- A1.11 sense of belonging

A2 personal growth
- A2.1 learned
  - about research topic
  - indigenous teachings
- A2.2 strengthening skills
  - A2.2.1 workplace/ school skills
  - A2.2.2 artistic skills
  - A2.2.3 interpersonal skills
- A2.3 perspective
  - on community members/spaces
- A2.4 changed relationship with research /university
  - [-] A2.4.1 mistrust in research
- A2.5 motivation: "I can make a difference"
  - A2.5.1 community engagement motivation
  - A2.5.2 motivation to pursue education
  - A2.5.3 initiative
    - taking on projects
    - social justice
- A2.6 professional develop (portfolio)
- A2.7 critical consciousness
  - community, culture, control
- A2.8 new opportunities
  - Work, school, money
- A2.9 changed behaviour (healthy)
- A2.10 challenged/ overcame challenges
  - to think creatively and speak confidently
- A2.11 youth positioned as experts
- A2.12 youth were effective research partners

A3 relationships
- A3.1 longevity
  - A3.1.1 pre
  - A3.1.2 post
    - Maintaining relationships via social media
- A3.2 fun
  - A3.2.1 informal non-research activities
- A3.3 trust
  - A3.3.1 (= PF1.3) time investment to build trust
- A3.4 expanding networks within and beyond
- A3.5 strengthened relationships
  - A3.5.1 strengthen community, elders, family friends relationships
  - A3.5.2 strengthen relationships among YCRs

A4 culture
- A4.1 learned more about my culture
- A4.2 connected with cultural identity
- A4.3 value: "how much it means to me"
  - recognized cultural contributions to wellbeing
- A4.4 shared culture with others
  - Enjoyed representing; spreading understanding

Facilitators of...

PF1 positive relationships
- PF1.1 local coordinator / gatekeeper
  - PF1.1.1 for communication (youth/academic divide)
  - PF1.1.2 for recruitment/retention/community buy-in/trust
  - PF1.1.3 for navigating the community
- PF1.2 collaborative problem-solving/discussion
  - PF1.2.1 consensus decision-making & 'dialogic space'; a safe and ethical space for youth to share and be heard
- PF1.3 Time to build trust/get to know each other
  - PF1.3.1 longstanding community relationship
  - PF1.3.2 consistent community presence
  - PF1.3.3 Getting to know youth as individuals/ where they are at/their circumstances/respecting their other priorities
  - PF1.3.4 informal time/hanging out
- PF1.3.1 ~~PF1.5 longstanding community relationship~~
  - PF1.3.2 ~~PF1.5.1 consistent presence~~
- PF1.4 personal recruitment strategies
- PF1.5 understanding and respecting local belief systems
  - PF1.5.1 Religion
  - PF1.5.2 integrating culturally-reflexive research practices & ceremony
- PF1.5 contributing to the community in non-research ways (i.e., start a club)

PF2 effective engagement/communication
- PF2.1 in-person
  - travelling to their community
- PF2.2 Social styles of engagement (i.e. talking circle > interview)
- PF2.3 casual/fun interactions
- PF2.4 examples > explanations (learn by doing)
- PF2.5 working within school/workplace
- PF2.6 social media/ technology
  - Communicating within research team and spreading messages to other youth as KT; as a medium for doing research
- Pf2.7 facilitating transport
- PF2.8 transparency (honest and open about project goals and limited potential for change)

PF3 youth investment/excitement/pride
- PF3.1 important contribution to the community
  - PF3.1.1 sense of community ownership
- PF3.5 train the trainer style
- PF3.2 praise (community, certificates)
- PF3.3 paid jobs to do research
- PF3.4 things to take home
- PF3.5 seeing their suggestions used

PF4 youth autonomy (able to do it alone)
- PF4.1 using technology (and adjusting as appropriate)
  - PF4.1.1 technologies youth are familiar with
  - disposable cameras (low-stakes if lost)
- PF4.2 flexible wording in grant/ethics proposals to reserve youth power to change directions
- PF4.3 adults ensure youth have support and resources as they need them
  - transport, training,
- PF4.4 structure and clear goals
  - prevents feelings of being overwhelmed; keep their attention
  - PF4.4.1 flexibility
    - youth can do it in a way that aligns with their needs and interests

A1.7 felt comfortable/included (sharing, participating)/trust
- PF5.1 use of technology
- PF5.2 multiple methods for different skillsets/interests
- PF5.3 enough materials (i.e. cameras/books) for everyone
- PF5.4 basecamp (safe/relevant location)
- PF5.5 Sharing food/meals
- PF5.6 Youth-developed instruments resonate with other youth / youth are more comfortable sharing with other (/older) youth

A1.8 enjoyment / fun
- PF6.1 social aspects

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Challenges to effective/ positive youth engagement

- **PC1 Inconsistencies / turnover**
  - PC1.1 academic research team members
  - PC1.2 youth research team members
  - PC1.3 community leadership/ gatekeepers
- **PC2 assumptions about…**
  - PC2.1 what the youth want — *i.e., want to use video, powerpoint presentations, will be interested in hard science*
  - PC2.2 what the youth can do (academic capacity)
  - PC2.3 what is owed to community (i.e., those who aren't research participants)
  - PC3.4 how research should be done (Eurocentric)
- **PC3 communication**
  - PC3.1 cultural communication norms
  - PC3.2 too proscriptive
  - PC3.3 too flexible/ unclear/ unstructured
  - PC3.4 effectively engaging quiet & outgoing youth
- **PC4 Relying on others**
  - PC4.1 relying on gatekeepers
- **PC5 organization**
  - PC5.1 time constraints — *<= (-) A3 relationships*; PC5.1.1 imposed by school/program schedule; PC5.1.2 hectic/ messy/ rushed/ unable to solve problems
  - PC5.2 competing priorities — PC4.2.1 community priorities/ events/ programs
  - PC5.no home base/ space
  - PC5.4 remoteness/ travel issues
  - PC5.5 insufficient training for youth co-researchers
  - PC5.6 lack of accessibility — *Youth with lower SES conditions have less time to give*
  - PC5.7 lack of adhering to research proposal — *i.e., youth choose research direction, but researchers' initial goal is held and the two compete*
  - PC5.8 institutional processes (i.e. delays)
  - PC5.9 Lack of funds — PC5.9.1 restrains on funding use