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## Indigenous Research Methods: A Systematic Review

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# Indigenous Research Methods: A Systematic Review

## **Abstract**

Indigenous communities and federal funding agencies in Canada have developed policy for ethical research with Indigenous Peoples. Indigenous scholars and communities have begun to expand the body of research regarding their peoples, and novel and innovative methods have begun to appear in the published literature. This review attempts to catalogue the wide array of Indigenous research methods in the peer-reviewed literature and describe commonalities among methods in order to guide researchers and communities in future method development. A total of 64 articles met inclusionary criteria and five themes emerged: General Indigenous Frameworks, Western Methods in an Indigenous Context, Community-Based Participatory Research, Storytelling, and Culture-Specific Methods.

## **Keywords**

Indigenous research, Indigenous methods, Indigenous research methods

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## Indigenous Research Methods: A Systematic Review

Indigenous research has historically been completed *on*, rather than *with* (i.e., in collaboration with) Indigenous Peoples in Canada (Canadian Institutes of Health Research [CIHR], Natural Sciences and Engineering Research Council of Canada [NSERC], & Social Sciences, and Humanities Research Council of Canada [SSHRC], 2014). Researchers have used research methods that do not incorporate Indigenous knowledge, or community or cultural values. It can be argued that Indigenous Peoples have previously been the subjects of research endeavours, rather than consenting participants. As a result, portrayals of Indigenous communities in peer-reviewed literature have been problem focused and deficits based. Lack of community involvement resulted in data that were unusable by communities. Unfamiliarity with and failure to prioritize cultural conceptualizations by the research community has resulted in detrimental practices associated with the acquisition, use, and interpretation of knowledge provided by Indigenous communities (The First Nations Information Governance Centre [FNIGC], 2014).

Such research practices are no longer acceptable (CIHR et al., 2014). The Tri-Council funding agencies (i.e., CIHR, NSERC, and SSHRC) have provided ethical guidelines and policy documents designed to promote best practices within Indigenous research. Formalized practices that promote inclusive policies have been implemented federally. Such policies include the CIHR Guidelines for Health Research Involving Aboriginal Peoples (CIHR, 2006), the First Nations Information Governance Centre's Ownership, Control, Access, and Possession (OCAP™) standards (FNIGC, 2014), and the Tri-Council Policy Statement 2<sup>nd</sup> Edition—Chapter 9, entitled “Research Involving the First Nations, Inuit, and Metis Peoples of Canada” (CIHR et al., 2014). Additional policies have been created specifically for research with Inuit (Inuit Tapirit Kanatami, 1998, 2005; Nickels, Shirley, & Laidler, 2006) and Métis populations (Métis Centre, 2010).

These policies document acceptable research practices when collaborating with Indigenous Peoples, and prioritize Indigenous values, traditions, and knowledge. These policies have also created ethical guidelines for research agreements between the researcher and the knowledge holding communities, including proposed guidelines related to informed consent, community partnership, academic integrity, disclosure, equity and benefit sharing, empowerment, and adherence to OCAP™ standards (Assembly of First Nations, n.d.).

OCAP™ standards were created to address government and academic self-regulation and to provide guidelines for research that were endorsed by Indigenous communities (FNIGC, 2014). These standards asserted that First Nations communities maintain control over research and recognized community rights as knowledge holders within a research process. Such research principles centered Indigenous communities within the research process, and promoted strategies that ensured research is determined, controlled, and disseminated by Indigenous Peoples. Adhering to ethical standards and community expectations has become mandatory for any researcher engaging in research with Indigenous communities and accessing Tri-Council agency funding. Indigenous communities have increasingly prioritized these approaches (FNIGC, 2014).

Indigenous communities have maintained the right to select their preferred method of data collection. Existing research practices have been modified to meet the expressed needs of communities. Processes

of adapting methods in order to meet Indigenous community expectations have produced methods that better incorporate Indigenous values, beliefs, and ways of knowing, facilitating research that is respectful, collaborative, and relational (Wilson, 2001).

The incorporation and prioritization of such Indigenous values has resulted in the documentation and dissemination of many Indigenous research methods and methodologies (Kovach, 2010). Many researchers have described these research methods as “Indigenous,” although it remains unclear exactly what constitutes an Indigenous research method or methodology (Wilson, 2001). There is a broad use of such terminology within research communities, with limited generalized agreement regarding what Indigenous research is and how such endeavours differ from mainstream research practices.

### **The Present Study**

Considering the potential misuse (accidental or otherwise) of Indigenous research methods and methodologies and lack of cohesive definitions, the purpose of the present study was:

- a. To catalogue the wide array of Indigenous research methods in the peer-reviewed literature, and
- b. To describe commonalities amongst methods to guide researchers and communities in future method development.

This was done through the apparatus of systematic review.

### **Methods**

#### **Inclusionary Criteria**

The authors did not specify a definition of “Indigenous” prior to selecting studies for review; this was purposeful. Through this method, we were able to employ an inductive approach and allow the researchers immersed in this work to provide a definition rather than prioritizing the authors’ judgment in terms of which methods were deemed “Indigenous” and which were not. The authors are engaged in work with Indigenous communities and peoples, and understand that imposing a Western deductive lens onto the concept of Indigenous research methods may perpetuate colonial ideals that prioritize reductionist science.

Only articles written in English were considered for inclusion. Initially, articles that discussed the theory of specific research methods were to be excluded, as there may not be sufficient evidence to evaluate the application of the method via these articles. However, after reviewing the small selection of studies that did include primary research, the authors concluded that articles that did not include data collection but did outline theory related to Indigenous research methods represented important contributions to the literature that should be included in the current review. Further, papers that outlined a method or methodology were included. Cram (2013) differentiated “method” from “methodology” by specifying that a method refers to the distinct tools and techniques used in data collection or analysis, while methodology refers to the overarching principles that direct a research project. In this article, we use whichever phrase the researchers used in their original work.

The researchers did not implement a quality assessment procedure of studies (e.g., the Quality Assessment Tool for Quantitative Studies) (Thomas, Ciliska, Dobbins, & Micucci, 2004) in this review for two reasons:

- a. The study purpose was to investigate methods as opposed to results, and
- b. The majority of studies would have received a “weak” rating and been removed from the review because most quality assessment tools favour randomized controlled trial designs.

## Search Terms and Procedures

Academic Search Premier, Australian Indigenous HealthInfoNet, Bibliography of Native North Americans, CINAHL, ERIC, Indigenous Studies Portal, Native Health Database, NIICHO, PsycARTICLES, PsycINFO, and Web of Science databases were utilized to examine the available literature. From December 30, 2015 to February 16, 2016, the following individual keywords were used: Indigen\* method\*, Indigen\* research\*, Aborigin\* method\*, Aborigin\* research\*, First Nation\* method\*, First Nation\* research\*, Métis method\*, Métis research\*, Inuit method\*, Inuit research\*, tribal method\*, tribal research\*, Native method\*, Native research\*, Indian method\*, and Indian research\*.

## Results

Initial searches, based on the keywords listed above, yielded 2,310 articles and a total of 269 were retained based on brief review of the title and abstract. Following a more in-depth review of the article content, 64 were deemed to meet inclusionary criteria (see Appendix A for flowchart). Following analysis by two researchers, five themes emerged: General Indigenous Frameworks, Western Methods in an Indigenous Context, Community-Based Participatory Research (CBPR), Storytelling, and Culture-Specific Methods.

### General Indigenous Frameworks

Through the initial analysis, it became clear that the word “method” was being used to embody both a procedure and also a framework. That is, the word was serving as a representation of two differing concepts within research. This distinction forms the basis for the first emergent theme: General Indigenous Frameworks.

A framework is defined by Merriam-Webster as “the basic structure of something: a set of ideas or facts that provide support for something” (“Framework,” n.d.). Within a research setting, this framework provides the abstract structure that guides a researcher in their pursuit of knowledge. A framework, however, does not dictate a specific technique for data collection or analysis. With the search criteria being “Indigenous research method” (and variations on this phrase), articles that used this exact phrase or a similar phrase as an explanation for their method were returned (Cameron, Plazas, Salas, Bearskin, & Hungler, 2014; Cheng, Wang, & Huang, 2009; Chinn, 2007; Cueva, Dignan, & Kuhnley, 2012; Dennis, 2014; Dyll-Myklebust, 2014; Evans, Hole, Berg, Hutchinson, & Sookraj, 2009; Le & Gobert, 2015; Makomenaw, 2012; Nakamura, 2013; Roe, Zeitz, & Fredericks, 2012; Russell-Mundine, 2007; Smithers-Graeme, 2013). For example, Dennis (2014) stated, “this study employed Indigenous Research Methodologies,” (p. 34), and detailed the explicit methods including a qualitative approach

and inductive data analysis. Cameron et al. (2014) indicated, “[i]n Indigenous methodology, the process of research is more than the production of new knowledge” (p. E5); the additions can include capacity building as well as community healing (Le & Gobert, 2015).

Further, some articles discussed combinations of methods such as Indigenous research methods and participatory action research (Evans et al., 2009), Indigenous research methods and CBPR (Cameron et al., 2014), or an Indigenous research paradigm and autoethnography (Smithers-Graeme, 2013). Others detailed utilizing an Indigenous research method or approach and then utilizing data collection methods that are uniquely Indigenous (i.e., yarning) (Roe et al., 2012; Russell-Mundine, 2007). Generally, authors did not provide a clear definition of Indigenous research methods, with the exception of Makomenaw (2012): “one where the researcher understands the role of Indigenous history, culture, language, and self-determination in the lives of Indigenous Peoples” (p. 858).

Cheng et al. (2009) described a process they termed “full-cycle Indigenous research approach” that included five steps: discovery of interesting phenomena, field observations, construction of the theoretical framework, empirical examination, and theory refinement. This article represented one of few that came from an Indigenous Asian perspective and from a discipline outside of psychology or the health sciences—in this case, business. Cheng et al. (2009) noted that they chose an Indigenous approach because bringing a Western theory into a Chinese context may prove challenging and ultimately futile, due to the required incorporation of Chinese traditions and social thought.

Chinn (2007) described utilizing decolonizing methodologies originally laid out by Smith (1999) to examine secondary school science curriculum “through the lenses of marginalized (traditional, local, indigenous, sustainable) and dominant cultures (capitalistic, consumer oriented)” (p. 1254). They also engaged participants in five of the critical Indigenous research activities proposed by Smith (1999): Indigenizing, connecting, writing, representing, and discovering.

### **Methods Often Used in a Western Context**

Kovach (2010) described a “paradigmatic approach” to research with Indigenous Peoples as influencing “the choice of methods (i.e. why a particular method is chosen), how those methods are employed (i.e. how data are gathered), and how the data will be analyzed and interpreted” (p. 42). Within this Indigenous approach to research, she utilized a conversational method to collect data (Kovach, 2010). The conversational method originated from storytelling and Kovach indicated that this method is found within Western research. However, the conversational method in Indigenous research differs from its use in Western research in several ways: a connection to Indigenous knowledge, a location within an Indigenous paradigm, a relational nature, a purpose (which is often decolonizing), following a specific protocol that reflects the Indigenous knowledge, a flexible nature, collaboration, and reflexivity (Kovach, 2010). Dennis (2014) also utilized a conversational method and noted one benefit as greater control of disclosure for participants, which is consistent with cultural norms.

**Photovoice.** Photovoice is a widely used Western research method that originated in the early 2000’s (Castleden, Garvin, & Huu-ay-aht First Nation, 2008; Hurworth, 2003). One advantage of using photovoice is participant engagement—if participants are not engaged in the research by providing the photos or videos and voiceover that serve as data, then the researcher has no data to analyze (Castleden et al., 2008). This involvement in the data collection process also promotes a sense of ownership over

the data, which is important in research with Indigenous Peoples and particularly CBPR (Castleden et al., 2008). Jones, Ingham, Cram, Dean, and Davies (2013) also indicated that photovoice is useful in traversing the divide that is presented between researchers and the Indigenous Peoples with whom they collaborate.

**Autoethnography.** Autoethnography was also utilized in several research projects with Indigenous Peoples. McIvor (2010) explicitly noted that her research method was an attempt to blend autoethnography with Indigenous research methods and paradigms. The similarities between storytelling (an Indigenous research method), autoethnography (which can be understood as telling one's own story), and the connection between the researcher and the participant(s) served as the rationale for this approach (McIvor, 2010). Smithers-Graeme (2013) suggested that researchers orient themselves using six questions proposed by Wilson (2008). For example, "How do my methods help to build respectful relationships between the topic I am studying and myself as researcher (on multiple levels)" (Wilson, 2008, p. 77)? This process results in a combined Indigenous research paradigm–autoethnographic approach (Smithers-Graeme, 2013). This method can also be thought of as a form of storytelling in which autobiography (stories about ourselves) and ethnography (stories about cultures) are combined (Lashua & Fox, 2006). This collaborative approach can facilitate connection between two groups (Lashua & Fox, 2006).

**Mixed methods.** In Western research, the term "mixed methods" typically refers to combining quantitative and qualitative data collection in a single project. Botha (2012) has proposed that, within Indigenous research, the term reflects a synthesis of the qualitative approaches that typify research with Indigenous Peoples and also unique Indigenous methods or ways of knowing. He argued that while qualitative methods are often utilized to obtain data when working with Indigenous Peoples, Indigenous methods go further (Botha, 2012). Botha (2012) provided an example of this mixed methods approach. While examining the relationships between Western and Indigenous Peoples in Africa, he utilized an ethnographic approach (Western) and then went further by re-analyzing the data and writing narratives in a reflexive process. Through this reflexive process, Botha (2012) considered the values of the Indigenous Peoples, including "ethical and relational aspects of knowledge making" (p. 317), which allowed for enhanced understanding of the data. Hill, Pace, and Robbins (2010) utilized the Western definition of mixed methods research (i.e., quantitative–qualitative) and added an Indigenous methodology when evaluating cultural validity of the Minnesota Multiphasic Personality Inventory-2. The purpose of this Indigenous methodology was to prioritize Indigenous values and opinions within the analysis (Hill et al., 2010). The researchers also incorporated several elements of a CBPR approach (e.g., seeking community consultation and verification on analysis), but did not explicitly name this approach (Hill et al., 2010). Elston, Saunders, Hayes, Bainbridge, and McCoy (2013) noted that their mixed methods approach allowed for increased involvement of Indigenous Peoples in health research concerning themselves.

Chilisa and Tsheko (2014) utilized a mixed methods approach across multiple phases of data collection in a study that examined beliefs about HIV amongst adolescents in Botswana. Initially, they combined Western and Indigenous qualitative methods (proverbs, metaphors, stories, myths, and traditional songs) that resonated with the culture in which they were conducting research. Their second and third phases were in line with method utilized by Hill et al. (2010): quantitative-qualitative-Indigenous (Chilisa & Tsheko, 2014). This process began by utilizing Indigenous knowledge on sex and sexuality

and the qualitative data generated in the first phase to create a questionnaire. This survey was reviewed by a community advisory board (often suggested within a CBPR framework), distributed to local adolescents, and then the data were analyzed using Western quantitative methods. Indigenous and quantitative methods were combined in the final phase, which included a control group. The authors noted that imparting helpful knowledge upon all participants was an important value for the Indigenous Peoples and thus a health promotion intervention (not related to HIV) was provided for control participants (Chilisa & Tsheko, 2014).

**Self-location.** Self-location was identified as an Indigenous research method in one study (Gillies, Burleigh, Snowshoe, & Werner, 2014). The purpose of using this method was to “develop deeper understandings and heightened consciousness of the socio-economic and political conditions of violence with which Indigenous youth in Canada interact” (Gillies et al., 2014, p. 5). The authors noted that there is a relational process required in self-locating and that many Indigenous groups hold relationality as an important part of identity. Another benefit of self-locating is acknowledging the enmeshed nature of one’s personal and professional lives and identity, which the authors argue cannot be separated.

**Etic-etic approach.** Two studies explored an etic-etic approach, specifically within the context of personality assessment (Fetvadjev, Meiring, van de Vijver, Nel, & Hill, 2015; Leong, Leung, & Cheung, 2010). This method entails the researchers focusing on independently uncovering both universal (etic) and specific Indigenous (etic) factors related to the construct in question; this approach ensures that the final data includes both majority culture factors and also Indigenous factors. These two categories of constructs have historically been thought of as distinct and somewhat conflicting; however, Fetvadjev et al. (2015) found that Indigenous personality factors mapped on to the Big Five Model. Leong et al. (2010) also noted similarities across general personality factors and those generated from Chinese novels and proverbs.

### **Community-Based Participatory Research (CBPR)**

CBPR is regarded as an acceptable approach to Indigenous research. The policy document created by the First Nations Information Governance Centre (2014) that outlines principles related to data Ownership, Control, Access, and Possession (OCAP™) recommended that community-based and participatory approaches be the predominant approaches within Indigenous research (FNIGC, 2014). CBPR encompasses collaborative research endeavours that prioritize the needs of the community. Other forms of such approaches include those labeled as participatory action research, community-based research, participatory evaluation, collaborative inquiry, and participatory research. Although distinctions exist between each of these frameworks, these terms have been used interchangeably as the underlying goal of collaboration, research equality, and community control.

Reviews of CBPR literature have recommended many components to prioritize within a CBPR approach (LaVeaux & Christopher, 2009). Commonly referenced principles include those described by Israel, Schulz, Parker, and Becker (1998), which have been found to be moderately applicable to Indigenous CBPR principles (LaVeaux & Christopher, 2009; Lewis & Boyd, 2012). These principles are as follows:

- a. Recognizes community as a unity of identity.



- b. Builds on strengths and resources of the community.
- c. Facilitates collaborative partnerships in all phases of the research.
- d. Integrates knowledge and action for mutual benefits of all partners.
- e. Promotes a co-learning and empowering process that attends to all social inequalities.
- f. Involves a cyclical and iterative process.
- g. Addresses health from both positive and ecological perspectives.
- h. Disseminates findings and knowledge gained to all partners.

CBPR creates necessary partnerships within a research team that prioritizes the needs of those directly affected by the issue of interest. Results are derived with direct supervision from those that need the knowledge the most, and those that can make the best use of them. Although there are many levels of involvement of the researcher within such CBPR partnerships, the model promoted for Indigenous research prioritizes the community's needs and makes space for the researcher when necessary, recognizing the importance of reciprocity. Rather than a researcher addressing their own professional needs within projects, communities control all aspects of the project and assume all decision-making responsibilities.

CBPR is often situated as a framework used to complement an Indigenous method, as both a philosophy to research and as an approach (Castleden et al., 2008). It involves many steps necessary to ensure the collaboration of research participants with the research team. Equality is promoted throughout project development, data collection, data analysis, and dissemination of results. Methods used within CBPR often begin long before any project development occurs. Logistical needs within CBPR involve creation of a research team or research partnerships such as development of a research advisory board, determination of roles within the project, such as project leaderships, and developing research standards (Velasquez, Knatterud-Hubinger, Narr, Mendenhall, & Solheim, 2011). Such processes have been described as engaged acclimatization, which was documented as crafting relations, learning, immersion, and activism (Grimwood, Doubleday, Ljubicic, Donaldson, & Blangy, 2012). This communication is fundamental within a CPBR approach; however, critical issues about authorship or acknowledgement within community-based research have been inconsistently applied (Castleden, Morgan, & Neimanis, 2010).

CBPR, as an Indigenous research method, is not a form of data collection, but embeds other Indigenous methods within it. CBPR has been used to facilitate initiatives related to photovoice (Castleden et al., 2008), story-telling (Christensen, 2012), multi-method research including focus groups (Garakani, 2014), semi-structured interviews (Cameron et al., 2014; Ivers et al., 2015), web-based surveys (Fox et al., 2011), yarning (Russell-Mundine, 2007), and other mixed-method approaches (Le & Gobert, 2015). The adaptability of CBPR values has been praised as a way to ensure research is completed in accordance with local norms and customs of communities through their chosen research method (Christensen, 2012).

## **Storytelling**

Story and the act of storytelling are profoundly important in many Indigenous societies (McIvor, 2010). Storytelling is a qualitative research method, in that participants describe their answers orally rather than on questionnaires, although the relationship and co-creation between the researcher and participant or a group of participants is also considered (Dyll-Myklebust, 2014; Hall et al., 2015; Roe et al., 2012; Wright et al., 2012). Wright et al. (2012) indicated that storytelling was the ideal method for integrating non-human elements (e.g., animals, water, wind) into their data collection and analysis. Storytelling can also be useful in the dissemination of knowledge uncovered in the data collection and/or analysis phases. Christensen (2012) struggled with how to translate the information she collected on homeless individuals in the Northwest Territories, but found storytelling (situated within a CBPR framework) to be essential in engaging community members.

**Yarning.** Yarning is considered by some to be a subtype of storytelling methodology; one research team (Geia, Hayes, & Usher, 2013) used the terms somewhat interchangeably throughout their paper. The name “yarning” is said to come from modern Indigenous people, who use the term to describe a culture-specific type of conversation (Fredericks et al., 2011). Walker, Fredericks, Mills, and Anderson (2014) defined yarning as “a conversational process that involves the sharing of stories and the development of knowledge. It prioritizes indigenous ways of communicating, in that it is culturally prescribed, cooperative, and respectful” (p. 1216). Utilizing yarning in data collection can help to ensure that the research paradigm is culturally safe, which may enhance the validity of data (Fredericks et al., 2011; Roe et al., 2012). Yarning equalizes researchers and participants (especially useful when conducting research across cultures) and allows the participants to guide the conversation that serves as data collection (Ghys & Gray, 2012; Walker et al., 2014). The purpose of the yarn also differentiates it: There can be social yarning and more formal research topic yarning (Bessarab & Ng’andu, 2010).

Two other types of storytelling were noted: Readers’ Theatre (Cueva et al., 2012) and Digital Storytelling (Wilcox, Harper, & Edge, ‘My Word’: Storytelling and Digital Media Lab, & Rigolet Inuit Community Government, 2013). Readers’ Theatre (reading a written script in a group setting) was also noted as a type of storytelling that can be helpful in the dissemination of research to Indigenous Peoples (Cueva et al., 2012). One benefit of Readers’ Theatre is the “opportunity to read the voice and feel the emotion of a different gender, age, and life experience” (p. 282). Storytelling was also modernized through a digital storytelling method (Wilcox et al., 2013). The purpose of this digitalization was to avoid the limitations of typical interview-based narrative research, mainly that the participants’ narratives are still processed through the lens of the researcher, a process that holds the potential for bias and skewing of the participants’ meaning. This digital process removed the researcher from any step from data collection to dissemination (Wilcox et al., 2013).

## **Culture-Specific Methods**

A large number of studies utilized a specific Indigenous method—one that originates from the Indigenous group that is collaborating on the study and is unlikely to be translatable to another context. For the purpose of organization, we have included subheadings regarding the geographic location and/or Indigenous group from which the method originated; however, the authors recognize that

Indigenous Peoples, even those from the same location or group, are diverse. We have deemed these “culture-specific methods.”

**Māori culture.** Many of the Māori people of New Zealand are involved in research with their communities and, as such, specific Māori research methods have been outlined in the literature. Kaupapa Māori was cited more often than any other culture-specific method uncovered in this review (McClelland, 2011; Smith, 1999). This is a method that is “steeped in the principles, culture, and philosophy of being Māori” (McClelland, 2011, p. 363) and can be translated as “Māori ideology” (Brewer, Harwood, McCann, Crengle, & Worrall, 2014, p. 1288). This includes self-determination, cultural aspirations, culturally preferred pedagogy, mediation of socioeconomic impediments, extended family social structures and practice, and a collective vision (McClelland, 2011; Smith, 1999). A Kaupapa Māori approach centralizes Māori worldview and beliefs so that each step of the research process is compatible (McClelland, 2011; Raerino, Macmillan, & Jones, 2013; Smith, 1999). Relationality is also central to a Kaupapa Māori method (Jones et al., 2013). Kaupapa Māori methodology came from the colonial history of research being done on the Māori instead of with these groups and so a central tenet is that the research should benefit the Māori people (McLellan, McCann, Worrall, & Harwood, 2014). Elder (2013) also utilized three specific Kaupapa Māori methods—*noho puku* (self-reflection), *whanaungatanga* (connection), and *kaitiakitanga* (guardianship)—in the data analysis portion of their study, although the entire project was guided by Māori principles. A Kaupapa Māori method was used across a wide variety of health research areas including speech pathology (Brewer et al., 2014), nursing (McClelland, 2011), asthma (Jones et al., 2013), and traumatic brain injury (Elder, 2013).

The Māori term “*whānau*” can be translated to mean extended family and additional words can be used to specify if the individual is referring to their genetic family or others with whom they share a familial level of closeness (Tomlins-Jahnke & Gillies, 2012). Tomlins-Jahnke and Gillies (2012) discussed a *whānau* research method, which operates under several other Māori principles, such as *whakapapa* (genealogy, acknowledging that one has descended from his or her ancestors) and *kaitiakitanga* (becoming a guardian of data and knowledge revealed in research. This method also included individual community members serving as agents of data collection, who would record *whānau* in conversations, which were then transcribed by an appointed *whānau* researcher. Next, *whānau* members listened to some of the conversations and collaborated with researchers on interpretation before coding and developing a model, which was the ultimate goal of the research.

Several other uniquely Māori research methods were documented in this review. *Marae wānanga* (culturally-relevant meetings in traditional locations) were utilized in focus group-like discussions in order to ensure cultural safety and that ceremony would be embedded in the data collection (Elder, 2013). “*Whakawhiti kōrero*, literally the exchange of ideas and discussion,” (Elder & Kersten, 2015, p. 1) was utilized to develop a Māori-specific assessment tool (*Te Waka Kuaka*) to be used with individuals with traumatic brain injuries.

**Indigenous North American cultures.** Wilson and Restoule (2010) reflected on the changes brought about in research with First Nations people of Canada when tobacco is offered as part of the process (i.e., *Tobacco Ties*). Tobacco was used to create relationships and secure a depth of knowledge from Elders (Wilson & Restoule, 2010). The researchers considered that a refusal of tobacco could be interpreted as a refusal to consent in the research process (Struthers & Hodge, 2004; Wilson & Restoule,

2010). Before offering tobacco to Elders, the researchers encouraged those utilizing a Tobacco Ties method to reflect on their research question and purpose when planting and harvesting the medicine (Wilson & Restoule, 2010). Using tobacco for its original, sacred purpose also serves to reclaim this practice and correct misunderstandings from non-Indigenous peoples (Wilson & Restoule, 2010).

Burchill, Lau, Pyett, Kelly, Waples-Crowe, and Liaw (2011) generated a unique hunting and gathering metaphor for creating focus groups. “The hunting process involved the Aboriginal researchers using their community knowledge of cultural protocols to make connections . . . and their understanding of the time needed to build relationships of mutual trust” (p. 32) to identify participants while the gathering portion involved flexibility and the incorporation of cultural practices to create a safe environment for participants (Burchill et al., 2011).

Another Indigenous approach to focus groups is the talking circle (Haozous, Eschiti, Lauderdale, Hill, & Amos, 2010). The talking circle is a tribal method of group information sharing and discussion, with a focus on cooperation within the group. A talisman is often used to denote the speaker at any given time (Haozous et al., 2010). Lavallée (2009) utilized a Sharing Circle method, which is similar to a focus group method in that participants are gathered together to discuss the research topic for the purpose of data collection. Lavallée (2009) differentiated the more Western focus group from the Indigenous Sharing Circle through “the sacred meaning [Sharing Circles] have in many Indigenous cultures and in the growth and transformation bases for the participants” and the “acts of sharing all aspects of the individual—heart, mind, body, and spirit” (p. 29). The Sharing Circle method also rebalances the power dynamic in the researcher–participant relationship—the participants grant the researcher permission to use the dialogue generated in the Circle for research purposes (Lavallée, 2009).

Anishnaabe symbol-based reflection was defined by Lavallée (2009) as a participatory action research method, but a culture-specific one. She also noted that the development of this method was influenced by Photovoice, a Western research method. Participants were instructed to create symbolic artwork that reflected their feelings about a program in their community and then describe their symbols within a Sharing Circle format. The combined symbol as well as description of the symbol served as the data for this project (Lavallée, 2009).

The Anishinaabe *mino-bimaadiziwin* (the Good Life) research methodology was presented by Debassige (2010). This methodology is spiritual and incorporates “past, present, and future of Good and respectful approaches to life” (p. 11) into the research process. Debassige (2010) recommended that researchers engaged in Anishinaabe *mino-bimaadiziwin* should seek, do, learn, and live in a spirit-centered way, such that this concept encapsulates their entire research program.

O’Reilly-Scanlon, Crowe, and Weenie (2004) detailed the inclusion of the Cree word “*wahkohtowin*” (kinship/relatedness) in a research methodology. *Wahkohtowin* represented a combination of the Indigenous concept that research is story and the Western theory of memory-work. The authors noted the benefits of using *wahkohtowin* as a research methodology: Relationships were formed on the basis of “trust, flexibility, humour, and a willingness to move beyond our personal comfort levels to a place of shared understanding and experience” (O’Reilly-Scanlon et al., 2004, p. 41).

Hall et al. (2015) discussed the application of Two-Eyed Seeing in research. This approach aims “to see from one eye with the strengths of Indigenous ways of knowing, and to see from the other eye with the

strengths of Western ways of knowing, and to use both of these eyes together” (Bartlett, Marshall, & Marshall, 2012, p. 335), thereby incorporating the benefits from both a Western and Indigenous lens (Hall et al., 2015).

**Indigenous Australian culture.** Pathway is an Indigenous research method and metaphor that was developed with Aboriginal Peoples of Australia. It utilizes concepts of the mountains, winds, and orientation (Fredericks, 2007). In this framework, the Path provides the structure that the research study will follow and the Way refers to the process of carrying out this research (Fredericks, 2007). Dadirri was also adapted from Indigenous Australian culture and is defined as “deep and respectful listening” (Stronach & Adair, 2014, p. 117). In this one study, Dadirri was combined with a conversational method of qualitative data collection “to appreciate how and why Indigenous people function in their own cultures and environments” (Stronach & Adair, 2014, p. 123). Despite not following a Western framework of research methods (e.g., no explicit focus on data collection), the use of Dadirri has the potential to enhance the depth of understanding on a topic (Stronach & Adair, 2014).

**Indigenous Filipino culture.** A variety of Indigenous research methods rooted in Filipino culture also emerged in this review. Research in psychology in the Philippines has generated the term “Sikolohiyang Pilipino,” which refers to a uniquely Filipino perspective on psychology (Enriquez, 1992; Protacio-Marcelino, 1990). In order to house this entire branch of psychology that is specifically Filipino, there is a whole library of Indigenous Filipino research methods (Church & Katigbak, 2002; Protacio-Marcelino, 1990). While we cannot explore the depth of each Filipino research method in this review, we have provided a summary. Church and Katigbak (2002) presented an overview of several Filipino research methods: pakapa-kapa (groping), pagmamasid (general scanning or looking around), pakikiramdam (sensing, feeling what is happening), pagtatanung-tanong (unstructured, informal, interactive questioning) (Pe-Pua, 1989), pagsubok (testing the situation), padalaw-dalaw (occasional visits made to respondents’ homes), pakikisangkot (deeper involvement in barrio activities), paali-aligid (casing), pakikipagkuwentuhan (storytelling), pakikisama (frequent interaction with the research participants), pakikipanuluyan (residing in the research setting), nakikiugaling pagmamasid (adopting the ways of a group one is observing), ginabayang talakayan (guided discussion), and pagninilay or paglilimi (introspection or reflection) (Pe-Pua, 1989; Pe-Pua & Protacio-Marcelino, 2000). Both pakapa-kapa (groping) and pagtatanung-tanong (unstructured, informal, interactive questioning) have been explored by many authors (Church & Katigbak, 2002; Pe-Pua, 1989; Pe-Pua & Protacio-Marcelino, 2000; Protacio-Marcelino, 1990). Pakapa-kapa refers to the investigation of phenomena and data without using a theoretical framework; this practice aids in the development of Sikolohiyang Pilipino (Church & Katigbak, 2002; Pe-Pua & Protacio-Marcelino, 2000; Protacio-Marcelino, 1990). Pagtatanung-tanong is considered a culturally safe form of qualitative data collection and has been utilized by several Filipino researchers (Church & Katigbak, 2002; Pe-Pua, 1989; Pe-Pua & Protacio-Marcelino, 2000; Protacio-Marcelino, 1990).

Most of the Filipino methods “involve (1) unstructured (though guided) conversations and discussions, often in a small group context, in lieu of more structured interviews; or (2) various degrees of participant observation” (Church & Katigbak, 2002, p. 136). These methods also operate from the assumption that the data quality is reliant on the relationship between the researcher and participant and that by utilizing Filipino research methods, the power differential between researcher and participant will be negated to some degree (Church & Katigbak, 2002).

**Indigenous cultures of the Pacific Islands.** Two research methods unique to the people of the Pacific Islands (in this case, Samoa) were discussed by Suaalii-Sauni and Fulu-Aiolupotea (2014): talanoa and faafaletui. Talanoa is an oral research method that provides a “cultural synthesis” through participants’ sharing of stories (Suaalii-Sauni & Fulu-Aiolupotea, 2014, p. 334). Faafaletui is the act of weaving together different stories and pieces of ancestral Samoan knowledge. Together, these two Samoan methods allow researchers to utilize a culturally specific and culturally safe method to elicit information from participants and also analyze this information into a culturally relevant narrative (Suaalii-Sauni & Fulu-Aiolupotea, 2014).

**Muslim culture.** A single Muslim research method emerged in this review: halaqah (Ahmed, 2014). Halaqah was created by Prophet Muhammad for the purpose of educating early adopters of Islam and, although there is considerable variation in modern practices, ultimately refers to group-based narrative generation (Ahmed, 2014). Ahmed (2014) also proposed a list of Islamic research principles, similar to counterparts engaged in Kaupapa Māori research. These principles are: primacy of Qur’an and Prophetic sayings, combining classical Islamic scholarship and sciences with a range of other research methods, using all human faculties of understanding, intellectual, rational, intuitive, and spiritual, centering the human situation in research, Islamic ethics and etiquette, and collaborative, participative, transformative, and useful research.

## Discussion

In Western approaches, research is understood as knowledge creation (CIHR, 2006)—if a researcher is interested in understanding more about a specific phenomenon, they select an appropriate method to explore with as much scientific rigor as possible. One distinction between Western and Indigenous research methods lies in this purpose: research done in collaboration with Indigenous Peoples cannot only reveal knowledge, but also decolonize, rebalance power, and provide healing (Brewer et al., 2014; Debassige, 2010; Ghys & Gray, 2012; Hall et al., 2015; Le & Gobert, 2015; Walker et al., 2014). McIvor (2010) even argued that self-determination and decolonization serve as the connection amongst all Indigenous research methods. Broadly, Indigenous methods should include methods that are culturally relevant and can serve beyond data collection to create relationships and support autonomy (Cueva et al., 2012; Lavallée, 2009).

Developing a positive relationship with the community in which the research is taking place is a requirement for the majority of Indigenous research methods laid out in this review (Lavallée, 2009). This ensures that the community members are involved in the research in some capacity, whether that be consultation, data collection, analysis, or dissemination of results. The inclusion of Indigenous Peoples in the research process, a privilege that had historically been denied, was cited by many as a significant benefit (Elston et al., 2013; Le & Gobert, 2015; Raerino et al., 2013). “The domain of research and science was mobilised to suit the imperialist agenda” (Dyll-Myklebust, 2014, p. 524), and by utilizing Indigenous research methods, those with formal training can invite marginalized groups and individuals to participate in meaningful ways and also work collaboratively to build capacity. This equalizing can also lead to a culturally safe environment for participants (McClelland, 2011; Roe et al., 2012). Le and Gobert (2015) emphasized, “There is also an implicit assumption that the research is reciprocal—that knowledge and power is shared equitably between the researchers and the community, and that the community can be enriched by the process” (p. 20).

Many of these Indigenous research methods can also transform qualitative research from a deficit-based perspective to a resilience perspective (Roe et al., 2012). Additionally, several articles reinforced the importance of including Indigenous Peoples in the research process (i.e., in data collection and/or analysis) (Cameron et al., 2014; Dennis, 2014; Evans et al., 2009; Geia, 2013; Helps & Barclay, 2015; Nakamura, 2013; Russell-Mundine, 2007). Authors that specifically utilized an Indigenous mixed methods approach noted the main benefit was having an opportunity to include marginalized voices in the research (Botha, 2012; Chilisa & Tsheko, 2014; Hill et al., 2010). Chilisa and Tsheko (2014) concluded, “there cannot be an indigenous research without mixed methods” (p. 224); in other words, when Indigenous Peoples contribute to the research in a meaningful way, this constitutes a mixed methods approach.

Another theme that emerged in the analysis of the literature was that Indigenous research methods prevent the prioritization of Western ways of knowing, which is common in most scientific pursuits. This primacy of Indigenous ways of knowing was incorporated in a variety of ways from project design (Hall et al., 2015), to explicit inclusion of knowledge holders (e.g., Elders) (Lavallée, 2009; O’Reilly-Scanlon et al., 2004), to offering of sacred medicines when carrying out data collection or analysis (Lavallée, 2009; Wilson & Restoule, 2010). Debassige (2010) presented a research methodology that is centered in Anishnaabe spiritual beliefs and Ahmed (2014) derived a method from ancient Islamic practices—this inclusion of spirituality is virtually absent from Western research and, often, Western research theories would condemn the contamination of a method with a spiritual undertone. Some researchers chose to use only traditional language in their data collection phases, which allowed participants to express culture-specific words and concepts that could not be readily translated into English (Elder & Kersten, 2015). This practice also prioritizes Indigenous knowledge, which can be a decolonizing process (Chilisa & Tsheko, 2014). Naming the research method or methodology using Indigenous language is also beneficial for participants and those who will receive the knowledge resulting from the research process (Elder & Kersten, 2015).

One of the explicit benefits of choosing an Indigenous research method is that situating yourself in the context is inherent in the process. As Cameron et al. (2014) stated, “For non-Indigenous researchers, an Indigenous methodology allows the researcher to enter into the world alongside Indigenous experience rather than framing the Indigenous world-view from a distance” (p. E5). By utilizing an Indigenous method or framework, researchers aimed to incorporate Indigenous knowledge, history, and experiences in the research process (Lavallée, 2009; Roe et al., 2012; Russell-Mundine, 2007).

A crucial consideration for researchers engaged in Indigenous research methods and frameworks is context. The importance of context when working with Indigenous Peoples and communities has been discussed in the literature before (King, 2015); however, this is amplified when utilizing Indigenous research methods and frameworks. An important component of all Indigenous research methods is situating the research within the context of the data source(s). This means that the data collection, analysis, and interpretation may vary considerably more in research approached using an Indigenous method or framework compared to typically Western methods that are often highly standardized and where removing context from the research is paramount. The majority of the research methods presented in this review emphasized the importance of situating the researcher and/or the Indigenous group(s) involved in the research. Throughout this review, a focus on predominantly Canadian Indigenous ethical policy, by using explicit search terms of recognized Indigenous Peoples in Canada,

generated specific contextual knowledge. Despite this prioritization of Canadian populations, methods were considered to be Indigenous if they were identified as such by the people using them. These methods were included, regardless of the context in which they were used, to reduce the imposition of individual author evaluations of what constitutes as Indigenous research.

Many of the studies that utilized an Indigenous research method also employed a qualitative method for data collection (Cameron et al., 2014; Chinn, 2007; Dennis, 2014; Dyll-Myklebust, 2014; Elder & Kersten, 2015; Evans et al., 2009; Graveline, 2000; Helps & Barclay, 2015; Kovach, 2010; Lashua & Fox, 2006; Lavallée, 2009; Nakamura, 2013; O'Reilly-Scanlon et al., 2004; Roe, Zeitz, & Fredericks, 2012; Willox et al., 2013). Several other researchers chose to combine a variety of Indigenous research methods and frameworks within a single study. For example, Evans et al. (2009) framed their research within participatory action research and Indigenous methods, but then also included a culture-specific method, En'owkinwixw, for a specific element of their data collection. En'owkinwixw is similar to a talking circle; however, the larger group split into four smaller groups at times throughout the sessions and then brought the ideas generated in those smaller groups back to the whole (Evans et al., 2009). Castleden et al. (2008) also situated their study within a CBPR framework and used photovoice as a data collection method.

Other specific methods emerged with distinct benefits. Storytelling was noted as helpful in decolonizing through the research process. Relationality is inherent in storytelling and this component can help to ensure that the participants are respected as equal partners in the uncovering of knowledge (Dyll-Mykelbust, 2014). Yarning is also helpful in decolonizing the research process and removing the power imbalance inherent in the researcher–subject relationship (Geia et al., 2013). Careful listening is inherent in yarning, as one should be fully engaged in the conversation at hand (Russell-Mundine, 2007). This engagement can result in data that are more valid and also build rapport and respect amongst researchers and participants or collaborators (Russell-Mundine, 2007). As yarning is already embedded in some Indigenous cultures, it can be a familiar and safe tool for research (Bessarab & Ng'andu, 2010). Storytelling was also the only method used in knowledge translation (Christensen, 2012). This researcher evaluated her knowledge translation efforts and received positive feedback regarding ease of understanding and relatability (Christensen, 2012).

Many Indigenous research methods and methodologies are also marked by innovation. The research team of Willox et al. (2013) identified shortcomings with the traditional storytelling method (e.g., perpetuating colonization through the data analysis phase) and engaged in problem solving around these issues, which resulted in the use of a digital storytelling method. This method removed the researcher from the analysis and interpretation of the data to ensure that participants' output was presented solely through their worldview (Willox et al., 2013).

The principal benefit in choosing a culture-specific method is that many of the limitations inherent in imposing a Western method on an Indigenous group are nullified. Several of the Māori researchers described how a method that adopts Māori worldview, beliefs, and principles “fits” better with Māori participants (Jones et al., 2013; McClelland, 2011; Tomlins-Jahnke, 2012). This enhanced match between participant and method allows for a more collaborative research process, but may also be important in the healing process of Indigenous methods described by many researchers. Smith (1999)



contrasted the general focus on economic gains of most research in New Zealand with the focus on reclaiming history and resources, such as land and water, of Kaupapa Māori.

The published literature on Indigenous research methods and methodologies can be organized into five themes: General Indigenous Frameworks, Western Methods in an Indigenous Context, Community-Based Participatory Research, Storytelling, and Culture-Specific Methods. Across all five themes, each Indigenous research method had the following components:

- a. Contextual reflection, in that the researchers must situate themselves and the Indigenous Peoples with whom they are collaborating in the research process.
- b. Inclusion of Indigenous Peoples in the research process in a way that is respectful and reciprocal as well as decolonizing and preserves self-determination.
- c. Prioritization of Indigenous ways of knowing.

**Lessons learned.** Researchers interested in pursuing a program that includes Indigenous research methods should incorporate this perspective in every step of the process—from the conception of the research question through knowledge translation and exchange. Unlike Western research methods, Indigenous research methods require that all components in the process embody the values of the Indigenous group involved. After reviewing the methods and methodologies presented in the literature, the authors also concluded that using an Indigenous method necessitates an Indigenous methodology, but that an Indigenous methodology could be utilized with strictly Western methods. For example, if a researcher was planning to use a talking circle method, then they must approach the entirety of their research with an Indigenous methodology, but a researcher employing an overall Indigenous methodology could do so while using Western methods, such as surveys. What is important is that the Indigenous community involved has the ability to determine the direction and approaches that are preferred.

Indigenous research methods are as diverse as the communities using them, making an encompassing definition of these methods difficult to obtain. The authors of this article also purposefully did not define “Indigenous” prior to the systematic review procedure in order to ensure that the review was comprehensive and inclusive in that any method or framework that an author determined to be Indigenous was reviewed. Despite this definitional challenge, a researcher interested in pursuing an Indigenous approach should begin their process with reflection, both in terms of their place in the research and also the Indigenous Peoples with whom they are collaborating. This reflection should be combined with conversations with community members and collaborators to determine methods and frameworks that prioritize Indigenous ways of knowing throughout all stages of the project. One can utilize various narrative methods, such as storytelling (Wright et al., 2012), talking circles (Hoazous et al., 2010), the conversational method (Kovach, 2010) and yarning (Geia et al., 2013). Others methods are specific to communities or cultures, and thus difficult to generalize appropriately, such as the Anishnaabe Symbol-Based Reflection (Lavallée, 2009). Researchers have also used Western approaches within Indigenous communities, such as community-based participatory research (Christensen, 2012; Lewis & Boyd, 2012), participatory action research (Evans et al., 2009), autoethnography (McIvor, 2010), and photovoice (Castleden et al., 2008). It is clear that a variety of methods and methodologies

can be qualified as Indigenous and this too is congruent with Indigenous ways of knowing; Indigenous research methods are what they need to be for the question they are trying to answer.

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## Appendix A

### Flow Diagram for Selection of Articles for the Study

