



12-10-2016

Qualitative Health Research Involving Indigenous Peoples: Culturally Appropriate Data Collection Methods

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Recommended APA Citation

Wright, A. L., Wahoush, O., Ballantyne, M., Gabel, C., & Jack, S. M. (2016). Qualitative Health Research Involving Indigenous Peoples: Culturally Appropriate Data Collection Methods. *The Qualitative Report*, 21(12), 2230-2245. Retrieved from <https://nsuworks.nova.edu/tqr/vol21/iss12/5>

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Abstract

Historically, health research involving Indigenous peoples has been fraught with problems, including researchers not addressing Indigenous research priorities and then subsequently often failing to utilize culturally appropriate methods. Given this historical precedence, some Indigenous populations may be reluctant to participate in research projects. In response to these concerns, the Government of Canada has developed the Tri-Council Policy Statement (TCPS2): Research Involving the First Nations, Inuit and Métis Peoples of Canada, which stipulates the requirements for research collaborations with Indigenous communities. Utilizing this policy as an ethical standard for research practices, this paper describes, critiques and synthesizes the literature on culturally appropriate oral-data collection methods, excluding interviews and focus groups, for use with Indigenous people in Canada. Results suggest that photovoice, symbol-based reflection, circles and story-telling can be methodologically rigorous and culturally appropriate methods of collecting data with this population. Suggestions are made for researchers wishing to use these methods to promote respectful and collaborative research partnerships with Indigenous peoples in Canada.

Keywords

Research Methodology, Qualitative Research, Data Collection Methods, Indigenous

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Acknowledgements

Amy Wright would like to acknowledge Dr. Sandra Carroll, Dr. Diana Sherifali, Dr. Ruta Valaitis and Dr. Jenny Ploeg for their thoughtful feedback and support of this work.

Qualitative Health Research Involving Indigenous Peoples: Culturally Appropriate Data Collection Methods

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Historically, health research involving Indigenous peoples has been fraught with problems, including researchers not addressing Indigenous research priorities and then subsequently often failing to utilize culturally appropriate methods. Given this historical precedence, some Indigenous populations may be reluctant to participate in research projects. In response to these concerns, the Government of Canada has developed the Tri-Council Policy Statement (TCPS2): Research Involving the First Nations, Inuit and Métis Peoples of Canada, which stipulates the requirements for research collaborations with Indigenous communities. Utilizing this policy as an ethical standard for research practices, this paper describes, critiques and synthesizes the literature on culturally appropriate oral-data collection methods, excluding interviews and focus groups, for use with Indigenous people in Canada. Results suggest that photovoice, symbol-based reflection, circles and storytelling can be methodologically rigorous and culturally appropriate methods of collecting data with this population. Suggestions are made for researchers wishing to use these methods to promote respectful and collaborative research partnerships with Indigenous peoples in Canada. Keywords: Research Methodology, Qualitative Research, Data Collection Methods, Indigenous

Historically, health research involving Indigenous peoples has been fraught with problems, including researchers not addressing Indigenous research priorities and then subsequently often failing to utilize culturally appropriate methods (Schnarch, 2004). Given this historical precedence, some Indigenous populations may be reluctant to participate in research projects (Assembly of First Nations, 2009). Internationally, to address these important cultural, ethical and methodological issues, several countries have recognized the imperative of having guidelines for the safe and ethical conduct of research with Indigenous peoples. For example, Australia's *Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research* (National Health & Medical Research Council, 2003), and New Zealand's *Guidelines for Researches on Health Research Involving Maori* (Health Research Council of New Zealand, 2010). Canada's *Tri-Council Policy Statement (TCPS2): Research Involving the First Nations, Inuit and Métis Peoples of Canada* (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2014), similarly provides contextually relevant guidelines for research involving Canadian Indigenous peoples. In this guideline, requirements for research collaborations with the Indigenous community, including the use of culturally appropriate data collection methods are described.

Qualitative methodology is increasingly used by applied health researchers to give voice to vulnerable populations (Miller, 2010) using interviews and focus groups to collect data; however, these methods may not be the most culturally appropriate methods for use with Indigenous people (Smith, 1999). Studies have attempted to use culturally appropriate data collection methods with Indigenous populations, however, to the author's knowledge, no paper has provided a critique of the rigor and cultural appropriateness of these methods.

Thus, the purpose of this paper is to describe, critique and synthesize the literature using data collection methods, other than interviews and focus groups, with Indigenous people in Canada. The literature was assessed for quality using the Critical Appraisal Skills Program (CASP) qualitative checklist (Critical Appraisal Skills Programme, 2013) and for cultural appropriateness using the standards outlined in the TCPS2 (Canadian Institutes of Health Research et al., 2014). The results of this review will act as an important resource for researchers to facilitate the selection of culturally appropriate methods for use in research, and to enable respectful and collaborative research partnerships with Indigenous people in Canada.

Literature Review

Indigenous peoples currently represent approximately 4.3 percent of the Canadian population, and include First Nations, Inuit and Métis (Canadian Charter of Rights and Freedoms, 2004; Statistics Canada, 2013). The term Indigenous is used in this paper only when the differentiation among groups cannot be made. The term Indigenous community refers to an Indigenous territory, organization or community with whom a researcher is conducting research, while recognizing that such a community is not always located in one geographical area (Canadian Institutes of Health Research et al., 2014; Evans et al., 2012).

The colonization of North America by Europeans led to devastating effects for Indigenous people as a result of forced relocation, and an end to self-government, traditional lifestyles, cultures, and ceremonies (The Truth and Reconciliation Commission of Canada, 2012). The damaging effects of colonization continue today, as Indigenous Canadians have poorer health outcomes than non-Indigenous Canadians, including high rates of diabetes, arthritis, infectious diseases, suicide, and higher mortality rates (Reading & Wien, 2009; Reading & Halseth, 2013; Smylie, Fell, Ohlsson, & Joint Working Group on First Nations, Indian, Inuit, 2010). In response to these outcomes, the Government of Canada ordered the Royal Commission of Aboriginal Peoples (RCAP), which in its review, specifically emphasized the need for research to better understand the health of Indigenous people (Hurley & Wherrett, 2000). Researchers were thus charged with determining how best to conduct research with this population.

Western research paradigms have developed within and are focused on mainstream society, and historically have not valued Indigenous sources of knowledge, such as dreams, visions, or spirit (Campbell, 2014; Hart, 2010; Saini, 2012). Indigenous research paradigms are unique to each cultural group, value the presence of multiple realities, and find truth in what is subjective (Koster, Baccar, & Lemelin, 2012; Saini, 2012). Knowledge is viewed as relational, passed down through oral tradition between generations and co-created within the components of the individual, between individuals, and between the individual and nature (Kovach, 2010; The Truth and Reconciliation Commission of Canada, 2015). Decolonizing research seeks to abolish colonial control over Indigenous people by giving power and voice back to Indigenous people, in ways that are in line with traditional Indigenous values and beliefs (Campbell, 2014). The ultimate goal of this research is self-determination, or restoring the rights of Indigenous people to govern themselves (Hulko et al., 2010). Valuing oral data as a source of knowledge is vital to Indigenous culture, therefore, facilitating methods to collect oral data is encouraged when conducting research with Indigenous people (Canadian Institutes of Health Research et al., 2014; Evans et al., 2012).

While interviews and focus groups, one-on-one or group discussions, respectively, are common methods of collecting oral data in qualitative research (Nunkoosing, 2005), they are not always conducted in ways that are sensitive to Indigenous values and beliefs. Without a researcher's collaboration and investment in the community with whom research is being

conducted, the relationship between the researcher and participant is at risk of being superficial, constructed solely for the purpose of data collection (Eide & Kahn, 2008; Nunkoosing, 2005). This contradicts the emphasis Indigenous people place on authentic relationships, and the researcher's responsibility to remain accountable to improving the life of the participant through research (Pinto & Smylie, 2013; Wilson & Young, 2008). It has also been recognized that researchers who use interviews or focus groups can be in a position of power, as it is the researcher who designs the interview questions, analyzes the data, and presents interpretations to the academic community (Al  x & Hammarstr  m, 2008; Eide & Kahn, 2008; Nunkoosing, 2005). To avoid these shortfalls, researchers should engage in participatory, or community-based research, where the community collaborates with researchers throughout the research process, from design through to dissemination, ensuring the research meets their needs, that it is conducted in a culturally appropriate manner, and that the community maintains ownership of the results (Schnarch, 2004; Smylie, Olding, & Ziegler, 2014).

A search of the literature, the details of which are described below, revealed that some researchers conducting research with Indigenous people in Canada are using data collection methods that may be more culturally appropriate than traditional interviews and focus groups. Through this review, it was found that methods including photovoice, symbol-based reflection, circles and story-telling were used to collect oral data in research with Indigenous people. Further details of each of these methods is provided below. Authors described their reasons for selecting these methods as a way to honour the importance of oral-tradition and traditional ceremonies to Indigenous people, as part of community-based research efforts, and in collaborative research efforts with Indigenous community members and Elders.

The TCPS2 (Canadian Institutes of Health Research et al., 2014) has been selected for use in this paper as a measure to determine whether the data collection methods used in the reviewed studies are culturally appropriate for use with Indigenous people in Canada. The TCPS2 was developed to ensure the ethical conduct of research involving Indigenous people in Canada (Canadian Institutes of Health Research et al., 2014). The first version of the policy was developed in 1998, but was deemed not culturally appropriate due to insufficient collaboration with the Indigenous community during its development (Castellano & Reading, 2010). The second revision, the TCPS2, was developed, and supported by the three major funding agencies for research in Canada, including CIHR, NSERC, SSHRC; national Indigenous organizations and communities; both Indigenous and non-Indigenous experts within the academic and research community; and federal agencies including Health Canada, Indian and Northern Affairs Canada, and Statistics Canada (Castellano & Reading, 2010). The TCPS2 describes requirements for researchers to collaborate with the Indigenous community, promote decolonizing research through ensuring mutual benefit; respect traditional customs and intellectual property; build community capacity; and ensure knowledge translation of findings to the community (Canadian Institutes of Health Research et al., 2014). The TCPS2 has been internationally praised for its collaborative development, and has received recognition for this by the World Health Organization (Castellano & Reading, 2010). The TCPS2 represents an overarching ethical policy for research of any kind involving Indigenous people in Canada, and must be adhered to when conducting research with Indigenous people in Canada (Canadian Institutes of Health Research et al., 2014).

The TCPS2 is relevant to qualitative research and data collection, as it recognizes and values the collection of oral data in research involving Indigenous people, respects cultural norms and practices, and promotes the participation of vulnerable participants (Canadian Institutes of Health Research et al., 2014). Similarly, as the guideline considers the contextual factors impacting the lives of Indigenous people in Canada, qualitative researchers should take care to adhere to its recommendations to ensure their research is both credible and

relevant to this population (Cochran et al., 2008; Smith, 1999). For these reasons, it has been determined that the TCPS2 is appropriate for use in this paper to measure whether the reviewed methods adhere to the standards of ethical, and culturally appropriate research practices with Indigenous people in Canada.

Methods

The first author is a non-Indigenous novice researcher, seeking to conduct a PhD thesis with an Indigenous community in Canada. She feels compelled to avoid the perpetuation of colonialism through the use of Western philosophies and methods that are not in line with Indigenous philosophies and ways of knowing. In order to conduct research in a more culturally appropriate manner, while satisfying the academic requirements of the PhD, she reviewed the literature to find methods that would meet the standards of the TCPS2, including respect for Indigenous culture and ways of knowing, promote egalitarianism between the researcher and the participant, all whilst also demonstrating a high level of methodological rigour. The results of this review provide rationale for the use of these oral data collection methods in her thesis work, and assist her and others to conduct respectful research with Indigenous people in Canada.

Two strategies were used to search the literature, including an electronic database search, followed by a hand search of the reference lists of studies meeting the inclusion criteria. Collaborative research with Indigenous populations using culturally appropriate data collection methods is a relatively new phenomenon; therefore, the search was limited to literature published between 1995 and 2015. This date range also captured studies that were initiated as a result of the RCAP recommendations in 1996 (Hurley & Wherrett, 2000). Search terms included Aboriginal, Indigenous, Native, First Nations, Métis, Inuit, or Indian; qualitative research, methodology, and research design. Searched databases included OVID Healthstar, Medline, CINAHL, EMBASE, AMED, Global Health, Web of Science, and PubMed. Study inclusion criteria included primary, qualitative studies, using culturally appropriate methods of oral data collection, including Canadian Indigenous participants and settings, written in English, and published.

The resulting studies were each critically appraised using the CASP checklist (Critical Appraisal Skills Programme, 2013) for evaluating qualitative studies. This tool focuses on three main measures of quality, including rigor, credibility, and relevance of the findings (Chenail, 2011). The checklist consists of ten criteria including evidence of a clear purpose, appropriate research design, consideration of ethical issues, rigor during data collection, analysis, and interpretation, and clear and valuable results (CASP, 2013). Some authors using CASP have devised grading procedures based on the number, or percentage of criteria that are met within the checklist to determine the level of methodological quality (Cesario, Morin, & Santa-Donato, 2002; Dixon-Woods et al., 2007; Harkness, Spaling, Currie, Strachan, & Clark, 2015; MacDermid, Walton, & Law, 2009; Masood, Thaliath, Bower, & Newton, 2011). In an effort to promote a high-quality synthesis of the evidence, the methodological quality of the studies was graded as strong, moderate or weak based on their number of missing CASP criteria. Strong was defined as not missing more than one of the 10 criteria. Moderate was defined as missing two or three of the 10 criteria. And lastly, weak, was defined as missing four or more of the 10 criteria.

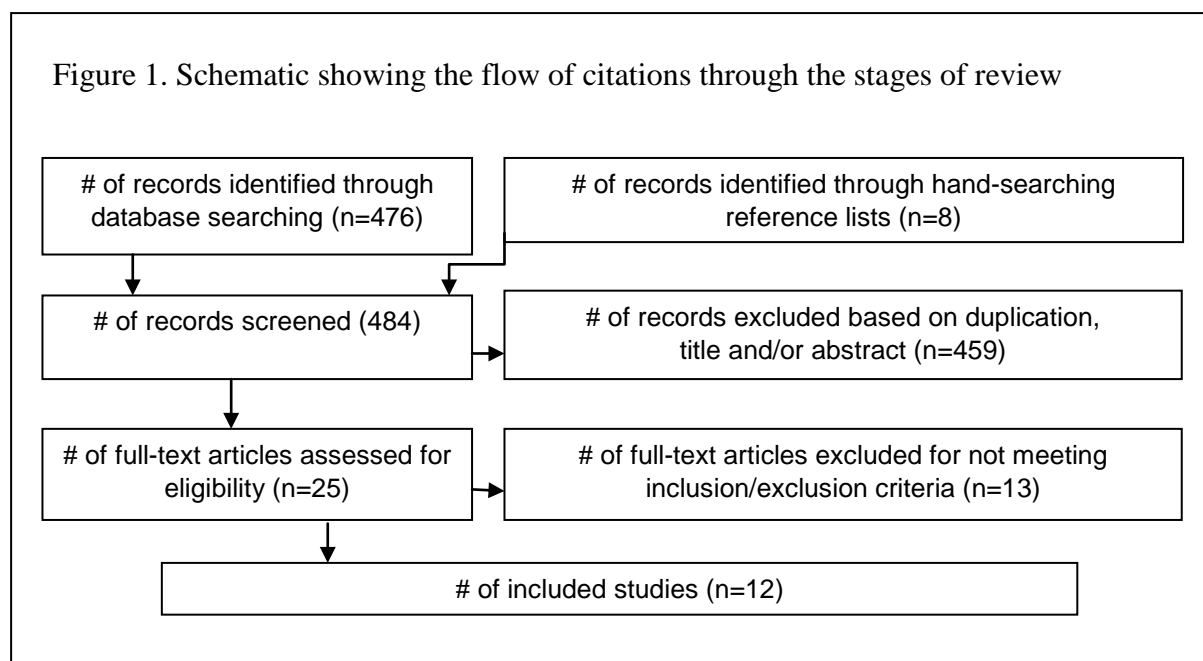
Next, the data collection method from the selected studies was critiqued for cultural appropriateness using 11 specific components of the TCPS2: *Research Involving the First Nations, Inuit and Métis peoples of Canada* (Canadian Institutes of Health Research et al., 2014), chosen based on their applicability to data collection in qualitative research.

Table 1. *Components of the TCPS2*

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1. Recognizing diverse interests within the communities
 2. Critical inquiry
 3. Respect for community customs and codes of practice
 4. Research agreements
 5. Collaborative research
 6. Mutual benefits in research
 7. Strengthening research capacity
 8. Recognition of the role of Elders and other knowledge holders
 9. Privacy and confidentiality
 10. Interpretation and dissemination of research results
 11. Intellectual property related to research
-

Results

The literature search resulted in a total of 484 studies, which were initially screened for duplication, followed by a title and, or abstract review. A full text review was conducted for 25 studies, and 13 studies were further excluded as they used interviews or focus groups, were not primary studies, or were conducted in a country other than Canada. A final 12 studies met the inclusion criteria. Figure 1 shows the flow of retrieved citations through the various stages of review.



Methods of oral data collection used by the studies included photovoice, symbol-based reflection, circles, and story-telling. One study, by Lavallée (2009), included the use of two oral data collection methods; each method underwent a separate critique for both methodological quality and cultural appropriateness. Most studies (n=9) were graded as having strong methodological quality using the CASP checklist (Castleden, Garvin, & Huu-ay-aht First Nation, 2008; Hulko et al., 2010; Kovach, 2010; Kurtz, Turner, Nyberg, & Moar, 2014; Lavallée, 2009; Loppie, 2007; Moffitt & Vollman, 2004; Poudrier & Mac-Lean, 2009;

Sherifali, Shea, & Brooks, 2012). None of the studies conducted research that critically examined groups in authority over Indigenous people, so the application of this criteria of the TCPS2 was not relevant. One or more study using either photovoice, symbol-based reflection or circles met all other 10 criteria from the TCPS2, demonstrating the ability to use these methods in culturally appropriate ways. Neither of the two studies using story-telling met the other 10 criteria. See Table 2 for study details on these critiques. A further description of these methods and how they met TCPS2 criteria for being culturally appropriate follows.

Table 2. *Quality and Cultural Critiques by Method*

Data Collection Method	Study	CASP Grade	Described TCPS2 Criteria (see # from Table 1)
Photo-voice	Badry & Felske, 2013	Weak	1, 3-7
	Castleden, Garvin & Huu-ay-aht First Nation, 2008	Strong	1, 3-11
	Moffitt & Vollman, 2004	Strong	1, 3-7, 9-11
	Poudrier & MacLean, 2009	Strong	1, 3-11
Symbol-based Reflection	Lavallée, 2009	Strong	1, 3-11
Circles	Lavallée 2009	Strong	1, 3-11
	Loppie, 2007	Strong	1, 3-11
	Hulko et al., 2010	Strong	1, 3-8, 10
	Kurtz, Turner, Nyberg & Moar, 2014	Strong	1, 3-11
	Schinke, Yungblut, Blodgett, & Peltier, 2010	Moderate	1, 3-11
	Sherifali, Shea, & Brooks, 2012	Strong	1, 3-8, 10
Story-telling	Kovach, 2010	Strong	1, 3-6, 9, 11
	Bird, Wiles, Okalik, Kilabuk, & Egeland, 2009	Moderate	1, 3-7, 9-10

First, photovoice is a creative-arts based approach used to elicit discussion with participants by using photographs taken by the participants to represent their views of the research question (Wang & Burris, 1997). Photovoice can be empowering, as it enables participants to document what is important to them, thus influencing social change and facilitating research that is community-based (Moffitt & Vollman, 2004; Wang & Burris, 1997). Photovoice has been advocated for use with Indigenous people, as its foundation in the creative arts is important to Indigenous culture and beliefs, and has been found to promote healing in this population (Archibald & Dewar, 2010; Pearce & Coholic, 2013).

Studies that used photovoice demonstrated their ability to be culturally appropriate by meeting the criteria of the TCPS2 (Canadian Institutes of Health Research et al., 2014). First, authors demonstrated the inclusion of anyone interested in being involved in the research. Castleden et al. (2008) drove participants who did not own a vehicle around their neighbourhoods to enable them to take pictures of areas they had difficulty getting to. Second, the method is respectful of the values and traditions of participants, as participants are responsible for documenting what they find important (Wang & Burris, 1997). Third, due to the importance of consent and privacy, participants were trained on how to obtain consent from individuals they were photographing (Castleden et al., 2008; Poudrier & Mac-Lean, 2009). Fourth, studies designed and implemented photovoice collaboratively with community members during study design, and throughout data analysis and interpretation (Castleden et al., 2008; Moffitt & Vollman, 2004). Fifth, by ensuring the aims of the research are in accordance with the priorities of the community, and by providing participants with copies of

their pictures at the end of the study, it is possible for the research to be mutually beneficial, and for participants to maintain ownership of the results (Castleden et al., 2008; Moffitt & Vollman, 2004). Sixth, the use of photovoice is an excellent way to build capacity within the community, as participants learn the basics of photography, as well as research skills. Seventh, Elders can be included in many ways, as a part of the research committee, by contributing to the research process, and by promoting participant recruitment (Castleden et al., 2008; Poudrier & Mac-Lean, 2009). Eighth, care must be taken to ensure the safeguarding of intellectual property. Study reports noted that the results and photographs were owned by the community, and that the sharing of results was done only with community and participant permission (Castleden et al., 2008; Moffitt & Vollman, 2004; Poudrier & Mac-Lean, 2009). Finally, discussions elicited by the photographs can also be conducted in a manner that is culturally appropriate, for example, by using circles or story-telling.

Symbol-based reflection is also a creative arts-based approach in which participants create or find objects to represent their views on an issue (Lavallée, 2009). Influenced by photovoice, the presence of symbols helped to facilitate discussion about the research question from the viewpoint of the participant (Lavallée, 2009). Lavallée (2009) demonstrated the ability to use this method in a culturally appropriate way. Anyone interested in participating, including those who were not Indigenous, were invited to participate in the study. This inclusivity was believed to be in line with Indigenous culture, and with the organization with whom this research was conducted (Lavallée, 2009). This method is respectful of Indigenous people who believe that energy passes from the artist to an object during its creation, and for many, this is a spiritual process that is considered sacred (Archibald & Dewar, 2010; Lavallée, 2009). This research was collaborative, emphasizing the importance of Elders, by fully involving the local Elder throughout the research process, including acting as an adviser to the researcher. To ensure the research was of mutual benefit to both the researcher and the community, Lavallée (2009) met with key stakeholders to confirm it was of mutual interest. While obtaining consent, Lavallée (2009), presented tobacco as a reflection of her respect for the knowledge the participants would share. Lavallée (2009) built research capacity in the community by involving the local Elder and other community members in the research process, including data interpretation. Participants granted permission to share their stories and symbols with the academic community, and some gave the researcher their symbols as a gift. Finally, similar to photovoice, these symbols can be used to elicit discussion through the use of circles or story-telling.

Circles have been described as sharing, talking, and group discussion circles; and as these three forms are comparable, in the present paper, they are referred to collectively as circles. Circles are similar to classic focus groups in which a number of participants gather together to discuss an issue (Lavallée, 2009), but differ significantly as the continuity of circles has meaning for Indigenous people, such as a reflection of the seasons, or the circle of life (Hulko et al., 2010). The use of circles in Indigenous culture is viewed as a holistic way to orally pass down stories through generations, promote healing, and learn from each other (Lavallée, 2009).

The six studies that used circles did so in culturally appropriate ways. First, they each incorporated a period of socializing and sharing of food, as well as traditions such as smudging, prayer, sacred objects, or exchanging gifts. Discussions were then facilitated by the use of a feather or stone, which when held by a participant identified them as the speaker and promoted a highly respectful and orderly group discussion (Kurtz et al., 2014; Sherifali et al., 2012). All six studies demonstrated appropriate consent procedures, including asking permission to share the findings. Elders were commonly described as the ideal facilitators of the circle discussion, promoting community-oriented and collaborative research, while building research capacity in the community (Sherifali et al., 2012). Elders and other

community members assisted in each of these studies, ensuring that data analysis and interpretation was conducted appropriately and accurately. Circles may be mutually beneficial for participants, as they learn from hearing the views of others, challenging their own thoughts and ideas (Loppie, 2007).

The fourth method of oral data collection, story-telling, is described as a method of discussion between researcher and participant(s) that is both relational and reciprocal (Bird, Wiles, Okalik, Kilabuk, & Egeland, 2009; Kovach, 2010). Contrary to classic interviews and focus groups in which the researcher asks questions for the participants to answer, story-telling enables both the researcher and participants to be active participants, sharing their perspectives, and learning from each other (Bird et al., 2009). Story-telling is considered to be a form of narrative inquiry, valuing the existence of multiple realities, where reality is individual, subjective, and socially constructed, and based on the assumption that individuals make sense of their world by constructing stories that reflect their perceptions of it (Webster & Mertova, 2007). The philosophical underpinnings of story-telling, are congruent with Indigenous research paradigms, and the method reflects a valued, traditional way to share knowledge and teaching within the Indigenous community (Kovach, 2010; The Truth and Reconciliation Commission of Canada, 2015).

Researchers in studies that used story-telling to collect data met most of the criteria of the TCPS2 for cultural appropriateness. First, traditional gifts, such as tobacco, were presented as a sign of respect and appreciation prior to initiating discussions with participants (Kovach, 2010). Second, the researcher demonstrated that story-telling was collaborative and mutually beneficial, as the method allowed the participant to share what was important to them rather than what was important to the researcher. Consent was obtained in both studies, and privacy was maintained by ensuring all identifying data was removed, and by using pseudonyms to identify participants. Third, Bird et al. (2009) built research capacity by engaging members of the community throughout the research process. A limitation of these studies was their inability to discuss how Elders were included in the research process, but researchers can use similar strategies to engage Elders as described by the studies using photovoice, symbol-based reflection and circles. In contrast, the safeguarding of intellectual property by only sharing results with the participant's consent, was a strength in the study by Kovach (2010).

Discussion

Mainstream research paradigms have not traditionally incorporated Indigenous sources of knowledge, however, a common ground between Western and Indigenous ways of knowing must be reached, to avoid dismissing important contextual information that can further understanding (Campbell, 2014). Contextual factors may be critical to promoting the best research design and to informing interpretation and dissemination of findings. Qualitative research is well suited to bridge the gap between Western and Indigenous ways of knowing, as qualitative methodologies value the existence of multiple realities and truth in the subjective experience of participants, while emphasizing the importance of oral data (Creswell, 2007). Findings from this review demonstrate that within qualitative research methodology, photovoice, symbol-based reflection, circles and story-telling can be used to collect data while embodying Indigenous beliefs and culture, and meeting criteria for both methodological rigor and cultural appropriateness. For example, the sharing of tobacco and smudging, used throughout the reviewed studies is a cultural expression of respect (Lavallée, 2009; Sherifali et al., 2012), the use of circles and story-telling are traditional methods of sharing and teaching (Kovach, 2010; Lavallée, 2009), and the use of creative art in both photovoice and symbol-based reflection promotes healing (Archibald & Dewar, 2010).

Through the use of these methods, health researchers can begin to include and honor Indigenous people's perspectives, facilitating healing and reconciliation between Indigenous and non-Indigenous people. A failure to do so risks continuing a history of exploitive research and distrustful relationships (The Truth and Reconciliation Commission of Canada, 2015).

Implications

The application of these methods has direct implications for researchers. First, a thorough understanding and appreciation of Indigenous history and the continuing impact of colonization is imperative for researchers seeking to conduct research with Indigenous people (Lavallée, 2009). It is through this understanding, that the necessity for collaborative research with Indigenous people becomes apparent in order to begin to overcome a history of colonial control and exploitive research (Leeuw, Cameron, & Greenwood, 2012; The Truth and Reconciliation Commission of Canada, 2015). To conduct this type of research, the researcher must be fully committed to building authentic and trusting relationships with community members, that may continue long after the research project completed (Campbell, 2014; Loppie, 2007). Likewise, the researcher must be willing to put aside the primacy of his or her own research agenda to meet the needs of the community, and to build research capacity (Loppie, 2007; Schinke, Yungblut, Blodgett, & Peltier, 2010). The researcher using these culturally appropriate data collection methods may need to engage Elders in sharing the significance of traditional customs, such as circles or the sharing of tobacco, with participants, as Indigenous people may be unfamiliar with these customs due the progressive loss of culture caused by colonization (Lavallée, 2009). Researchers need to plan for sufficient time to develop trusting relationships with the Indigenous community with whom research is being conducted (Bartlett, Iwasaki, Gottlieb, Hall, & Mannell, 2007; Maar, Seymour, Sanderson, & Boesch, 2010; Sherifali et al., 2012). Using photovoice or symbol-based reflection may further prolong the process, as both require additional time for taking photos and constructing symbols before discussing their meanings with participants. Researchers need to secure funding that can realistically support the study through to its end, and in consultation with Elders and knowledge holders, devise realistic goals for completion (Castleden et al., 2008; Lavallée, 2009). Due to the intimate nature of story-telling, researchers should be prepared to offer participants community supports and services when sensitive or traumatic information is shared (Kovach, 2010). Similarly, researchers may also experience emotional fatigue, requiring time for self-care and reflection on sensitive issues (Kovach, 2010). For the non-Indigenous researcher, certain sacred methods of data collection, such as circles, are more appropriately facilitated by a community member, or Elder, rather than by the researcher (Sherifali et al., 2012).

To further develop these methods, a meticulous description how they meet the criteria of the TCPS2 (Canadian Institutes of Health Research et al., 2014) is required in reports and publications, to provide future researchers with strategies for their own work. In particular, researchers must explain how Elders and other knowledge holders were engaged throughout the research process, as this is an integral component of conducting culturally appropriate research with Indigenous people (Lavallée, 2009; Saini, 2012; Schnarch, 2004). These important details were not adequately described in some of the reviewed studies (Badry & Felske, 2013; Bird et al., 2009; Moffitt & Vollman, 2004). Similarly, strategies to protect the privacy of participants, techniques for obtaining consent, and how the ownership and safeguarding of intellectual property was addressed, are also important components of the research process that must be addressed in all dissemination activities including final reports and publications (Campbell, 2014; Canadian Institutes of Health Research et al., 2014). The

researcher is obligated to defend the ethical soundness of their research, promote collaborative and healing relationships with Indigenous people, and to further understanding of conducting research with Indigenous people in the literature (Campbell, 2014; Canadian Institutes of Health Research et al., 2014).

In the same way, researchers must ensure they describe how methodological rigor was maintained through the research process. Since data collection and analysis is an inductive and relational process in qualitative research, with the potential for the researcher's values and beliefs to influence the results, the researcher must describe how the relationship between the researcher and the participants was addressed (Thorne, 2000). The researcher should exercise reflexivity, demonstrated by a continuous reflection on how the researcher's attitudes and values may influence the research process (Al  x & Hammarstr  m, 2008). Practicing reflexivity also allows the researcher to critically analyze the role of others in the research process, and how the research may impact the lives of the participants, and Indigenous people as a whole (Nicholls, 2009). Describing these insights in reports gives context to the results, and further evidence of the truthful and transparent interpretation of the data (Garside, 2014). Researchers need to provide a detailed description of data analysis, specifically, how the data analysis procedure was collaborative, how Elders were involved, how and why interpretations were culturally relevant, and which methods they used to ensure the analysis was trustworthy (Marion, Finnegan, Campbell, & Szalacha, 2009). Addressing these issues assists in establishing trustworthy and credible research methods, and enhances the development of this new body of knowledge (Garside, 2014). Finally, novice researchers should seek to work with experienced mentors when attempting these methods. The academic use of these methods with Indigenous people is relatively new, and consequently, there is little experience to draw on in the literature. Mentoring by academic advisors and Elders is key for the researcher to successfully conduct these methods in effective and culturally appropriate ways (Canadian Institutes of Health Research et al., 2014; Lavall  e, 2009).

Research with Indigenous people has been described as an important strategy to promoting reconciliation and healing (The Truth and Reconciliation Commission of Canada, 2015). Specifically, collaborative research with Indigenous people builds research capacity in Indigenous communities, and strengthens trusting relationships between individuals (The Truth and Reconciliation Commission of Canada, 2015). Similarly, collaborative efforts with Indigenous people are needed to develop innovative methods of oral data collection that will add to the limited repertoire of such methods in the literature. In particular, efforts to develop and devise methods that incorporate creative arts are important, as these methods have been demonstrated to promote healing for Indigenous people (Archibald & Dewar, 2010). Specifically, strategies to incorporate Elders and other knowledge holders when using storytelling to collect data are lacking in the literature, and are an important area of inquiry. Researchers have the opportunity to be leaders alongside Indigenous people in the collaborative effort to promote high quality research to inform health policy and practice and promote healing and improve outcomes amongst Indigenous people in Canada.

Strengths and Limitations

There are several strengths and limitations in the present paper worth describing. First, the use of the TCPS2 (Canadian Institutes of Health Research et al., 2014) to assess the cultural appropriateness of the methods contributes greatly to the relevance and strength of the results of this review, as the policy statement considers the Canadian context, is highly regarded and widely supported by numerous institutions and researchers, and is required for any research conducted with Indigenous people in Canada. The use of the CASP (Critical Appraisal Skills Programme, 2013) checklist ensured a standardized method of critiquing the

methodological quality of the studies in this review. Although authors should strive to meet all CASP criteria and report this in their manuscripts, publishing constraints may limit reporting of these details. Consequently, some studies in this review may have met the CASP criteria and been missed because information was not included in their manuscripts. Finally, there may be some Indigenous journals that are not yet indexed in the databases searched for this review. Therefore, it will be important to update reviews, such as this one, as Indigenous research methodologies become more common, and more methods are used and tested.

Conclusion

In conclusion, this review has identified methods of oral data collection that are both methodologically rigorous and culturally appropriate for use in research with Indigenous people in Canada, including photovoice, symbol-based reflection, circles, and story-telling. These methods have been demonstrated to be respectful of Indigenous traditions and culture, as well as reconciliation and healing. Researchers conducting research with Indigenous people in Canada can use this repertoire of oral data collection methods to promote ethically sound research practices, and respectful and trusting research partnerships. Further development of these methods in the literature is ongoing, requiring strategies to advance the methodological quality and cultural appropriateness of their use.

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Amy Wright would like to acknowledge Dr. Sandra Carroll, Dr. Diana Sherifali, Dr. Ruta Valaitis and Dr. Jenny Ploeg for their thoughtful feedback and support of this work.

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Article Citation

Wright, A. L., Wahoush, O., Ballantyne, M., Gabel, C., & Jack, S. M. (2016). Qualitative health research involving indigenous peoples: Culturally appropriate data collection methods. *The Qualitative Report*, 21(12), 2230-2245. Retrieved from <http://nsuworks.nova.edu/tqr/vol21/iss12/5>
