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Adapting Western Research Methods to Indigenous Ways of Knowing

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Abstract

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Indigenous communities have long experienced exploitation by researchers and increasingly require participatory and decolonizing research processes. We present a case study of an intervention research project to exemplify a clash between Western research methodologies and Indigenous methodologies and how we attempted reconciliation. We then provide implications for future research based on lessons learned from Native American community partners who voiced concern over methods of Western deductive qualitative analysis. Decolonizing research requires constant reflective attention and action, and there is an absence of published guidance for this process. Continued exploration is needed for implementing Indigenous methods alone or in conjunction with appropriate Western methods when conducting research in Indigenous communities. Currently, examples of Indigenous methods and

theories are not widely available in academic texts or published articles, and are often not perceived as valid.

To change health inequities, researchers have recognized the need to build true partnerships with communities.[1] Indigenous communities and researchers have voiced a variety of concerns with "research as usual" and emphasized the value of true partnerships, including decolonizing research to instill a balance between Indigenous and Western frameworks and methods.[2–4] We use a case study of an intervention research project to exemplify a clash between Western research methodologies and Indigenous methodologies and how we attempted to reach reconciliation. We provide implications for future research based on the lessons we learned through this process. The authors of this article are a Native American junior researcher (V. W. S.) and a white researcher with more than 15 years of experience conducting research in Native American communities (S. C.).

For this article, we use the term Indigenous knowledge to describe local, culturally specific knowledge unique to a certain population. Indigenous knowledge is often depicted as being alive, in current use, and transmitted orally.[5–7] Indigenous knowledge of one population may be useful to another group; or in other words, Indigenous knowledge may be generalizable.[6,8] There is a rich body of literature on Indigenous knowledge written mostly from the perspective of Indigenous people.[7,9–11] There is another literature on Indigenous knowledge that comes from the development field to describe, for example, agricultural methods or uses for botanicals that come from local knowledge.[8] The focus in this article is on the first body of literature. A key point to consider is that gathering data from an Indigenous person does not necessarily indicate that Indigenous knowledge has been gathered.

The use of Indigenous knowledge is driven by ethical protocols including treating it with respect and care[12] with the acute understanding that it is shared to benefit others.[5] These protocols may have overlap among tribal nations, and may also be local.[13] As we learned and describe in this article, these protocols determine certain research methods and use of theory that may or may not be appropriate.

NATIVE AMERICANS AND RESEARCH

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The history of health-related research with Native American nations mirrors the troubled relationship between the federal government and the tribes. In both

cases, the pattern has been analysis and diagnosis by external observers with minimal or no input of local perspectives, followed by top-down, authoritative prescriptions dictating what the tribes should be doing. From the Indigenous perspectives, both among Native Americans and other Indigenous people such as the Maori, researchers have committed a number of "sins," as potently defined by Deloria.[14] Past researchers have disempowered communities, imposed stereotypes that reinforced internalized racism, and conducted research that benefited the careers of individual researchers, or even science at large, but brought no tangible benefit to the communities struggling with significant health disparities. Many tribal nations have provided accounts of researchers who have exploited tribes by coming in, taking information from tribal members, and providing nothing in return.[15] This is not distant history; rather it characterizes much of present behavior.

DECOLONIZING RESEARCH AND COMMUNITY-BASED PARTICIPATORY RESEARCH

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In response to what many see as Western academic oppression of Native American communities in the name of science, Indigenous researchers and community partners are increasingly calling for research to be decolonized.[3,9,12,16–18] Decolonizing research is a process for conducting research with Indigenous communities that places Indigenous voices and epistemologies in the center of the research process.[3,19] It critically examines the underlying assumptions that inform the research and challenges the widely accepted belief that Western methods and ways of knowing are the only objective, true science. Holding Western beliefs and methods as "the" true science marginalizes Indigenous methods and ways of knowing by denigrating them as folklore or myth.[3] In Smith's[3] view of decolonizing research, the researcher should center Indigenous values and follow Indigenous protocols. This does not mean researchers should reject all Western methods and theories, as they may be adapted if deemed appropriate and beneficial by the local community.

We believe that the attempt to decolonize research is well complemented by a community-based participatory research (CBPR) approach. CBPR is less a method than an orientation to research that is more dialogical and egalitarian in its approach. CBPR also places an emphasis on social justice by addressing the social determinants of health.[20,21] CBPR is an orientation to research that advances the development of culturally centered research designs and public health interventions, as well as the integration of Indigenous research

methods.[22] Many researchers across racial and ethnic communities have used CBPR to integrate cultural knowledge and strengths into public health interventions.[23–25]

The CBPR model was developed from within the Western scientific tradition and although more culturally sensitive than its predecessors, it still requires adaptation to fit Native American contexts. This adaptation includes finding ways to recognize the impact and current influence of historical factors, to respect tribal sovereignty, to address issues of data ownership and control, and to incorporate Indigenous ways of knowing.[26–28] Tribal sovereignty provides tribal nations with separate legal and political authority, including the authority to regulate research and researchers on their lands. As tribal nations gain more power and assert their sovereignty, use of CBPR and decolonizing research has become less of an option and more of a precondition for research.

MESSENGERS FOR HEALTH CASE STUDY

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This case study is based on an intervention research project, Messengers for Health (MFH), which employs decolonizing and CBPR approaches. MFH is a partnership between the Crow Nation and Montana State University. Commencing work in 1996, the partners have since been committed to respecting and making Crow values fundamental to the project. For details on the project partners, process, and outcomes see previously published articles.[29–35] A central component of MFH is the Community Advisory Board (CAB), which includes individuals who participated in planning the grant, cancer survivors, tribal elders and leaders, and women who work with or are interested in women's health. The CAB met monthly during its grant-funded era and meets now as a nonprofit board of directors.

When this partnership began, we could not find established protocols for partnership research between Native Nations and universities. Neither the Crow Nation nor Montana State University had protocols for partnering. To keep tribal administration apprised of the project and to receive guidance, we met regularly with the Crow Tribal Chairmen and Tribal Health Department. Years into our project the Crow Tribal Legislative Branch demonstrated their full support of the work of the project through the passage of a Tribal Resolution (LR09-02) of approval. There are now examples of research agreements and protocols for partnership development,[36–41] and we recommend new partnerships develop agreements.

The case study began 9 years into the partnership and 5 years into being funded with a research grant. The CAB and other community members decided to develop a program to support the Indian Health Service (IHS) in providing high-quality health care to community members, and to gather data via interviews to inform program development. In collaboration with the CAB, we developed questions to ask Crow women patients and IHS health care providers about interactions between patients and providers. The CAB decided that both Native American and white project staff (including the PI and students) would conduct community interviews and that participants could select who would interview them and whether they were to be interviewed individually or in small groups. MFH project staff conducted semi-structured interviews with Crow community women in November 2005. S. C. interviewed the providers individually at the Crow Service unit in the winter of 2005–2006.[42] After the interviews were transcribed, we proceeded to our standard practice of co-analyzing the data with community partners. This decolonizing approach and use of CBPR principles integrates Crow people's interpretation of community data, thus providing valuable insights that may not be available to outside researchers. Community and academic partners conducted a first round of analysis of these community interviews in 2006 by pulling out themes, topics, and issues from the transcriptions. The results of this analysis were used for program development in several areas.

A second round of analysis began in December 2007 when V. W. S., who had worked on the project as an undergraduate student at Montana State University and was enrolled in a doctoral program in another state, was interested in further analysis of the interviews to apply toward a dissertation. It is standard practice in public health to incorporate theory into data analysis, and her dissertation advisor encouraged her to select a theory to guide her work. Her advisors, located across the country, were unfamiliar with the Crow community and the MFH project. The advisors did not suggest Indigenous theory as a legitimate option, which is understandable because at that time and even now, there were no recognized and accepted Indigenous theories or models of public health research or practice. V. W. S. struggled to find an appropriate Western theory to follow, which created tension for her. Although interested in Indigenous methods, she was biased toward finding an appropriate Western theory and assumed that only a Western theory would be acceptable to her advisors. Reflecting on this in hindsight, both authors recognized and acknowledged that not including the CAB in this decision process was perpetuating colonization. The qualitative interviews with providers and

community members had been collected before V. W. S. decided to use them for her dissertation. V. W. S. planned to further use the data in a manner that would satisfy the requirements of her degree granting institution and provide beneficial information to the community to continue to guide the project intervention.

With input from her dissertation chair, V. W. S. decided to use the PRECEDE-PROCEED model to organize the interview data into themes. Her decision was made in part because interview data would inform an intervention to improve interactions between IHS providers and patients and PRECEDE-PROCEED can be used as a model for planning and evaluating health promotion programs.[43–45]

The university partners (V. W. S. and S. C.), the CAB, and the Crow Project Coordinator (referred to hereafter as the team) conducted the qualitative analysis over 5 meetings at the Crow IHS hospital. The first meeting went smoothly. We reviewed the process of interviewing and analysis that already occurred and discussed qualitative content analysis and human participants' protections. The task for the next meeting was provided so: team members were to read through the interviews and write down salient themes, topics, or issues. University partners indicated that themes, topics, or issues could be a few words, phrases, or sentences. V. W. S. also designed a handout that included the interview questions and themes identified in the initial analysis in 2006. The team planned to confirm the previous themes and identify new themes. University partners provided copies of the printed transcripts and offered CAB members the option of taking home as many transcripts as they wanted. All community partners chose to take copies of all transcripts.

The second meeting convened 2 weeks later to discuss themes the team members individually identified in the transcripts. In contrast to the usual CAB meetings, which are lively and full of laughter and shared dialogue, this meeting was awkward, with long periods of silence. No CAB members had written themes on their handouts. The team discussed themes identified in the 2006 analysis. Conversation became lively when a theme prompted CAB members to share stories of a friend's, a relative's, or their experiences at IHS. However, the conversation lost energy and focus when the team was solely talking about identifying themes or examples of specific themes.

At the third meeting, V. W. S. introduced the PRECEDE-PROCEED model and encouraged team members to categorize interview themes into the model's categories. This meeting had the same feeling and energy as the second

meeting. Several CAB members asked V. W. S. to explain the meaning of the categories and the reason for categorizing the themes based on the model. Another CAB member explained that she had read the interviews, but did not know what V. W. S. expected her to do next. She went on to say that although the board has good thoughts, they just did not understand the purpose of the analysis. She also stated that they really wanted to help but did not understand what the team was doing. CAB members shared that they spent time with the interviews outside of the meetings and tried to comply with the instructions. University partners felt that they had difficulty providing meaningful explanations of the categories and the relevance of putting the themes into these categories in a way that made sense to community partners.

As in the second meeting, the discussion would gain traction when CAB members talked about their own experiences and told their own stories. One CAB member shared her personal story of cancer as well as the associated positive and significant impact that the MFH project had in the community. Other CAB members echoed the positive impact of the MFH project. They also said that they learn by telling stories. The Project Coordinator, a Crow tribal member, explained her understanding of themes from her experience conducting interviews by sharing that she noticed people saying the same things and that when people are saying the same things, those are themes.

At this point, CAB members became vocal about wanting to analyze the transcripts. A member suggested the team try again and the decision was made to meet again soon. CAB members agreed that although at the beginning they did not understand the purpose of coding the data, they now did and they wanted to try again to identify themes. The team decided to discuss themes again at the next meeting.

After this meeting, V. W. S. talked with her dissertation chair about the difficulties in the CAB meetings. Although V. W. S. was partly concerned that her explanations of the model might have been unclear, she also felt that the PRECEDE-PROCEED model was not appropriate. Her dissertation chair provided recommendations for explaining the model and co-analyzing the data with community members. Her chair was open to choosing another theory, but emphatic that a theory must be chosen. Although V. W. S. had her chair’s support, she lacked direction. She continued to explore the literature, searching for new theories and contemplating Indigenous methods for co-analyzing the data.

At the fourth meeting, 2 CAB members who had been very enthusiastic about analyzing transcripts at the third meeting were not in attendance. Again, there were long periods of silence when V. W. S. started to discuss themes. During a particularly awkward moment, S. C. asked the CAB, “Why is it so hard to analyze these interviews?” An elder explained that the interview transcripts were difficult to read and understand, and that the themes were confusing because when making themes, everything became scattered. She said that Crow people don’t break things apart.

The meeting shifted. CAB members became engaged in the conversation and the energy returned to the room. CAB members emphasized that for Crow people, storytelling is a way of honoring tradition and honoring ways of knowing. They said that everything Crow people do has a story behind it and people share their experiences as a way of teaching others. They shared that having scattered categories and breaking apart people’s stories loses the meaning and the understanding of the whole picture and purpose of the story. Moreover, it felt like a violation of the Crow culture because there is always a bigger purpose of the story that is lost when it is broken up into themes. Another CAB member explained, “Crow people work with words using stories, not by breaking stories apart.”

They also expressed that analyzing by breaking apart felt disrespectful to the women who shared their stories and that the story’s impact hinges upon the experiences and relationships the storyteller has to those receiving the story. For example, when a respected elder shares her experiences, it is very impactful to her audience in large part because of who is speaking. In keeping with Western scientific methods, the interview transcripts were coded anonymously, not mentioning the names of the women who shared stories. CAB members explained that when the elder is not named, the person receiving the story loses their connection with the elder, thus losing an essential part of the impact of the story.

Toward the end of the fourth meeting, team members decided to take time to think about the stories and how the team could use stories to understand the transcripts. After the meeting, V. W. S., S. C., and the Crow Project Coordinator discussed the team’s struggles. Given the CAB’s feedback, the PRECEDE-PROCEED model would no longer be used to organize the themes. However, the next steps for analysis remained unclear. V. W. S.’s academic advisors were supportive of the process and allowed for exploration and revisions to the analytic plan.

At this stage, V. W. S. and S. C. searched for a more appropriate way to work with the data, including talking with colleagues with expertise in qualitative methodology. When V. W. S. searched for relevant literature, she found other Indigenous researchers who struggled when trying to apply qualitative content analysis with interview data.[46,47] V. W. S. contacted an Indigenous researcher whose dissertation had voiced similar tensions in analysis of qualitative data analysis. The researcher encouraged V. W. S. to explore Crow traditional teachings for resources to frame the study.

Several academics suggested Narrative Analysis[48] as a way to organize and analyze the data. However, Narrative Analysis focuses on the researcher's interpretation of another's story, not the storyteller's interpretation. This method did not fit with what the CAB was describing and so was discarded as a potential solution.

In the end, neither the literature nor university partner's colleagues had an answer to the question of how to analyze qualitative interviews through a storytelling method that did not break apart the data. The team decided to go back to the initial codes arising from the analysis meetings and use them in 2 ways: (1) as stories that were more culturally acceptable, and (2) as codes that could be used to understand patient–provider interactions. Team members from Montana State University compared and contrasted the collective story that emerged from analytic team discussion with descriptions of patient-provider interactions in the literature. A conceptual model was developed based on emergent themes from discussion and by incorporating literature based descriptions.[49–55] We further developed the model using a culturally significant metaphor—the Crow tipi.

The tipi lodge is sacred to the Crow people, and many traditions and stories surround this important symbol of home. The Crow tipi is unique from some other tribes in that it has 4 main base poles versus 3. The base poles were used as an analogy for the 4 main themes from the data (visit context, visit expectations, history, and time) and their connection at the top was analogous to the main theme of trust. As a validity check, V. W. S. presented the model to CAB members (fifth meeting) and IHS providers for validation at 2 separate meetings. Both CAB members and providers suggested minor modifications for the model. The final model is presented in Simonds et al.[42] Individual stories were not retained as a part of the model. Although CAB members agreed that the model resonated with their experiences, there was more excitement regarding the use of the tipi as a symbol of trust in the medical

interaction, with CAB members relating the strength of the tipi structure with the strength of trust in the medical interaction. As one CAB member explained, "With a good relationship with the provider, when you're in a strong wind like when you are sick, it's like you are anchored. The trust part of the tipi is the anchor of the interaction."[42(p840)]

REVIEW

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As more researchers and students become interested in CBPR and decolonizing approaches, more direction is needed so that true partnerships can develop that equally share community and university–researcher voice and power in all phases of the research process. We are extending the literature by providing a case study of tensions and lessons learned from a project in which community members and university researchers worked together in all stages of the research process. We found few examples in the literature of working through the inherent tensions in implementing CBPR and decolonizing approaches. This article provides a foundation for future work at this intersection of Indigenous and Western knowledge production.

We were trained in qualitative content analysis and mistakenly assumed that this method would be translatable and transportable with these interviews in this setting. As a graduate student, V. W. S. learned prescribed ways of conducting research, including choosing from clearly labeled theories, and selecting from clearly outlined methods for collecting and analyzing data. She had a thorough grounding in Western-based teachings, and her dissertation advisors provided her with Western ways to understand the methods and analysis of the project. During her course work, she struggled to relate Western theories to Indigenous communities. Although she managed to apply them, the applications were theoretical. Committed to decolonizing research and CBPR, she had no direction for the actual implementation of decolonizing research in practice. After the breakthrough with CAB members, it became clear that the theory and methods were not appropriate and were colonizing approaches.

In this discussion, we will consider 3 problems with asking the CAB to conduct content analysis with the interview data: (1) breaking apart the interview transcripts into themes, (2) relating the themes to each other outside of the transcripts, and (3) placing the themes into the PRECEDE-PROCEDE model.

First, CAB members emphasized that breaking apart the interview transcripts into themes was uncomfortable and ultimately did not fit the Crow worldview. This is because breaking apart stories changes the relationship between the

storyteller and the receiver of the story and loses the relationship of the pieces of the story to each other.

When learning through stories, it is often the relationship to the storyteller and knowledge of their past experience that helps the receiver relate to, take in, and learn from the story. Taking away the name of the storyteller takes away the life experience of the storyteller, which is broader than the 1 story that is shared. Indigenous researchers have emphasized the importance of context and relationship to Indigenous methods.[12] As Wilson explains, the credibility of the storyteller is solidified by knowing who is talking and where they are talking.[12]

It can be considered unethical in tribal communities to share stories without naming the storyteller. Our research protocols had the storytellers remain anonymous, thus removing them from their life and community context. This is standard practice for interviewing from a Western perspective and is seen as protecting the rights of participants. Crow community members and people in other tribal nations working in other research projects have subsequently taught us the importance of naming those who share stories and the importance of relationship between storyteller and receiver.

Another consequence of breaking apart the interview transcripts into themes is that the relationships among of the pieces of the story are lost. When a story is told, it is the whole story that is taken in and learned from. It is not possible to receive a theme or quote from a story and learn in the same way. Wilson describes this process and product in his book *Research as Ceremony*,

> *analysis from a western perspective breaks everything down to look at it. So you are breaking it down into its smallest pieces and then looking at those small pieces. And if we are saying that an Indigenous methodology includes all of these relationships, if you are breaking things down into their smallest pieces, you are destroying all the relationships around it.*[12(p119)]

The second problem of applying content analysis to these interviews is asking the CAB to relate the themes to each other independent of the transcripts. Correlating abstracted themes is compatible with Western methods but, as we found, can be an aggressive action from an Indigenous perspective because it severs the relationship between learner and storyteller. CAB members relayed to us that the context and much of the true meaning of the story is lost when

examining themes in relationship to each other independent from the transcripts. Every person's story is different, and to combine a piece of one person's story with another person's story through combining themes is disrespectful to the storytellers and their stories.

Third is the problem of placing themes into the PRECEDE-PROCEDE model. This is not an Indigenous model and it did not fit with community members' preferences for understanding the data. Throughout MFH, Crow cultural protocols have been followed and many of the Western theories that guided the team's work were consonant with the Crow culture. For example, social learning theory and social support theory were used in the original grant application to inform the intervention protocol, and these theories fit with the Crow culture's reliance on family and community ties and learning from each other, or modeling. However, our process broke down when university partners used a theory that was not consistent with the Crow culture.

There are dozens of books and scores of articles detailing Western theories complete with boxes and arrows used to understand, explain and predict behaviors with an implicit cultural bias toward a linear or individualistic orientation that does not merge well within an Indigenous paradigm. Culturally appropriate and responsive public health theories for nonmajority populations are lacking.[56–59] For example, the health belief model uses information on an individual's perceived threat of disease and perceived benefits and barriers of taking action to predict likelihood of taking a health action such as getting a Pap test. Theories such as this assume a positivist research paradigm, which aims to develop universal truths that can be used to predict and control behaviors. In the literature on Indigenous research paradigms, predicting and controlling behaviors is not a priority. Western science has a rich postpositivist tradition, including grounded theory, which does not force qualitative data into an existing theory or model. The problem came when we pushed to apply a linear positivist theory into our qualitative analysis, which did not fit this situation and halted the data analysis process.

Lessons Learned

Although our collaborative research process was challenging, we learned many valuable lessons that we anticipate will provide guidance to other partnerships attempting to decolonize research so that respectful, valid, and beneficial research can be produced. There does not exist a checklist, list of rules, or a

“how to” roadmap for working with tribes in a decolonizing research relationship. Each tribal nation and each research project and team is unique.

Discuss role of worldviews in research project at start. The first lesson we learned is the importance for partners to discuss and articulate assumptions about the role that Indigenous knowledge, epistemologies, and methods will have in the research project. Mohatt et al. stated that when researchers are shaped by a Western paradigm, they must pay close attention to their own values and beliefs.[60] The degree of trust within the partnership affects the extent to which community partners will share Indigenous knowledge or ways of knowing with academic partners who are not community members. Although academic partners may expect Indigenous community members to share Indigenous knowledge to inform research methods, many Indigenous community members are familiar with both Indigenous and mainstream worldviews, making it important that academic partners explicitly acknowledge their commitment to producing culturally centered research methods.

Community members may assume, often correctly, that the academic partner is uninterested in using Indigenous knowledge or methods to guide the research. In Native American communities, knowledge is sacred and access to it must be earned. Unfortunately, the history of much social science and health-related research indicates that Indigenous knowledge and methods have not been respected. In contrast to the Western perspective that knowledge should be open to anyone, Native peoples often believe that researchers do not inherently have a right to “discover” knowledge in Indigenous communities.[12]

Native American community members often have prior exposure to Western-research methods and this has a number of implications for doing collaborative research. In our case, when university partners first discussed this aspect of the project with CAB members, we asked what would be the best way to gather information to move forward with project development. The CAB advised conducting a standard survey with community members and health care providers. The vast majority of the CAB members are not trained in research methods; however, many community members have been exposed to research over the years and hold preconceived notions of what research looks like. For most, the methods they are familiar with are Western. Jones and Jenkins discussed an asymmetry that exists as Indigenous group members must possess knowledge of the dominant society to survive as members of a colonized society, but members of the dominant majority do not have to have similar knowledge of Indigenous society.[61] Many tribal members thus have some

notion of what Western research entails although non-Native academics have not been exposed to Indigenous methods to nearly the same degree. Partners should work to make these differences in knowledge explicit.

Decolonizing research is a process. The second lesson is that decolonizing research is a process and an orientation to research that must be consciously attended to throughout the entire partnership, similar to a CBPR approach. As the use of a CBPR approach facilitates a greater likelihood of engaging community members, it does not ensure the use and understanding of Indigenous methods. We learned that we must be respectful and diligent in our implementation of decolonizing research, paying careful attention to the process and being ready to acknowledge and make appropriate changes when Western methods or theories are not appropriate. Indigenous knowledge, theories and methods cannot be applied indiscriminately across tribal nations, as there is great diversity among tribes.

Although decolonization of research theoretically guided our work and Crow values have always been at the forefront of this project, we stumbled in terms of how to practically implement decolonization. We began with a decolonizing process by asking community partners for their perspectives and insights on how to approach the next phase of the research project, the topic of which they had selected. When suggestions were from a Western research perspective, we proceeded in that direction instead of stepping back to more fully engage in decolonization efforts.

Fortunately, the partnership had developed a level of trust whereby CAB members felt comfortable speaking out when the research process ran into an impasse that resulted from our attempt to use theory and methods that were inadequate and so divergent from the Crow outlook. In our case, all partners exhibited flexibility, and ultimately the team was able to find a common ground where Indigenous and Western methodologies could complement each other.

Critically evaluate methods to be used. The third lesson is to look for the most suitable methods for gathering, analyzing, and applying data including alternative or non-Western approaches. Wilson suggests that methods may be borrowed from other paradigms as long as they fit the "ontology, epistemology, and axiology of the Indigenous paradigm."[12(p39)] He claims that applying a Western methodology in an Indigenous context may be incompatible because the underlying epistemology of Western methods and theories is not Indigenous.[12] This is what we found when trying to apply the PRECEDE-PROCEED model in the Crow context. In our experience, some theories are

adaptable and work because there is some congruence between the paradigms. However, some theories and methods are too foreign and must be discarded when working in Indigenous communities. When decolonizing research and attempting to utilize some Western methods or theories, one must be vigilant to ensure that the research process comes from a place that respects and gives priority to or centers on Indigenous knowledge and methods.

Two examples of coming toward a compatible method in research with Indigenous community members come from Christensen[62] and Blodgett et al.[63] In these studies, researchers constructed a fictional story from collaborator's stories and vignettes out of the co-researchers' stories, respectively. It would be even more powerful and useful if community members become the authors of their own stories or vignettes instead of being spoken for.[63] Additional methods that may be compatible across paradigms include digital storytelling,[64] phenomenology,[6] photovoice,[65] theater scripts,[66] other artistic forms, and other inductive qualitative methods.[6,46,67] Methods, such as photovoice, that were developed or adapted using CBPR in other communities as a way of ensuring cultural centeredness might also be translated and used by Indigenous community research projects and vice versa.

Further exploration of storytelling as a research method and intervention strategy for behavior change is necessary. CAB members emphasized the importance of storytelling and that Crow people teach and learn through storytelling. Native people have traditionally used stories to examine their communities, as a primary method for illness explanation, as well as to cultivate deeper levels of understanding that facilitate positive changes for community members.[68–70] Through the use of stories as nondirective approaches, Native people developed a system to guide, and when necessary modify, behavior in a supportive manner.[71]

Other researchers have also explained the importance of storytelling for other tribes and classify storytelling as an integral Indigenous research methodology.[18,47,63,72] Storytelling has also been used in Native American and Alaska Native settings as an intervention research approach to improve health behaviors, as an educational method, and to train health care workers.[68,73–75]

A major challenge is how to render these methods acceptable to Western-based granting agencies and article reviewers. For instance, one of the authors' mentors read Wilson's[12] *Research as Ceremony* book and commented that it was great learning for her, but recommended not including its Indigenous

methods approach in a grant application because it most likely would not be favorably reviewed. Mohatt et al.[60] discussed their dilemma during the writing of a National Institutes of Health grant application, of keeping a method that was developed through a participatory process with Alaska Native community members or developing a more positivistic and quantitative design that they felt would receive better scores in the review process. There is a tension between exploring how to develop and incorporate Indigenous theory that will provide interventions that change and predict healthier behaviors in tribal communities; the push is to promote evidence-based interventions, which are seen as further colonizing behavior because the preponderance were developed for and tested with the majority population.[76] We believe it is essential for academic institutions to reexamine how research methods and theory are being taught so that students develop the conceptual tools to identify how cultural values and assumptions underlie methods and theories and to appreciate non-Western methods and theories.[57] Students must also be able to practice negotiating the bridge between alternative methods and theories in real-world partnership settings and to rethink their own assumptions that are often taken for granted.[13]

Conclusions

Our article is a call for exploring, valuing, and using Indigenous knowledge and methods on an equal footing with Western knowledge and methods, and for integrating Indigenous and Western methods when appropriate. Openly engaging with the tensions that arise from attempting to integrate methods will hopefully result in better methods for conducting research with Indigenous communities and an Indigenous research methodology that is respected and utilized on its own footing.[13,61]

As we move toward making research culturally centered, data need to be created and analyzed through processes recognized and valued by the communities in which and with which we are working.[60,77] Blodgett et al. discussed how the use of monoculture Western research paradigms "reinforced a process of knowledge production that privileges mainstream voices while devaluing those from marginalized groups."[63(p529)] This leads to excluding Indigenous community voices from academic discourse[63] and further marginalizing communities through biased research.[12] How data are gathered, generated, analyzed, stored, and shared and who owns the data presupposes certain relationships of power and control.[8]

As an Indigenous, decolonizing researcher, V. W. S. has experienced the isolation that can occur when attempting to find alternatives to Western concepts of science while working in academia. She has learned to trust other sources as valid and legitimate. These resources include the history and culture that her family and communities have provided, as well as learning from experiences relayed to her through stories from her tribal members and other Native American scholars. Fortunately, during the time of her training, Indigenous scholars around the world were publishing on the topic of decolonizing research,[3,4,9,12,78] and V. W. S. found Indigenous scholars willing to discuss their struggles with her. They emphasized how important it was for V. W. S., as an Indigenous person, to know and draw upon her culture and stories. This emphasis on decolonizing research is a great responsibility and can be overwhelming, confusing, and can complicate achieving promotion and tenure. Native researchers who strive to produce work that is valued by their academic institutions may face the obstacle of convincing their colleagues of the value of decolonizing work and the validity of Indigenous methodologies.

We realize the importance of not feeling paralyzed by this idea of "decolonizing" our research—either as Indigenous people or as non-Indigenous people working in partnership with Native American communities. The answer, however, is to accept that challenge in spite of our weaknesses and move forward, keeping in our heart our ultimate vision of health equity, continuing to do work that benefits the community, and privileging and promoting Indigenous knowledge and methods. In our project we never came to a comfortable process for working with the qualitative data as stories and are still exploring methods. We are convinced that better scholarship and research will ultimately unfold through developing, recognizing, and using Indigenous knowledge and methods, and merging Indigenous and Western methods when appropriate.

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Human Participant Protection

Go to:

This article is not based on research with human participants; therefore, institutional review board approval was not required.

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