

DRAWING ON INDIGENOUS WAYS OF KNOWING: REFLECTIONS FROM A COMMUNITY EVALUATOR

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Abstract: The clash between Western and Indigenous ways of knowing has been epitomized by the “parachuting model” of the Western researcher who drops onto the reservation, collects data, and leaves, never to be heard from again. The strengths of indigenous science, for example, observation and contextual factors, are either ignored or appropriated. These past (and sometimes present) wrongs committed by academic researchers continue to be a contentious issue in Native communities, where, despite the research dollars flowing into the community to “solve” health problems, disparities between Native health status and that of the general population persist. This article shares reflections from a community-based evaluator who, along with a Lakota health educator, served as “cultural translators” in a community participatory process led by a community agency. We recognized the need to work with/in two cultures—both the academic research world and the Native community—and drew on collaborative evaluation principles and indigenous ways of knowing to conduct formative evaluation research on smoking cessation issues for pregnant Native women.

Résumé : Le conflit qui règne entre les façons d'apprendre occidentales et autochtones a été incarné par le « modèle du parachutage » du chercheur occidental qui atterrit sur une réserve, fait la collecte de données, et part sans qu'on entende parler de lui par la suite. Les forces de la science autochtone, par exemple, l'observation et les facteurs contextuels, sont soit ignorés soit adoptés. Ces erreurs du passé (et parfois du présent) commises par des chercheurs académiques demeurent une source de tension dans les communautés autochtones où, malgré les fonds de recherche qui affluent aux communautés afin de « résoudre » les problèmes de santé, les écarts persistent entre les niveaux de santé dans les communautés autochtones et dans la population générale. Cet article fait état des réflexions d'un évaluateur de la communauté et d'un éducateur sanitaire de Lakota, qui ont agi à titre de « traducteurs culturels » dans le cadre d'un processus participatif communautaire dirigé par une agence communautaire. Nous avons reconnu

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la nécessité de travailler avec et dans les deux cultures—soit celles du monde de la recherche académique et de la communauté autochtone—et nous nous sommes basés sur des principes d'évaluation collaborative et des façons d'apprendre autochtones pour effectuer une recherche évaluative formative sur les enjeux liés à l'abandon du tabac chez les femmes enceintes autochtones.

The clash between Western and Indigenous ways of knowing has been epitomized by the “parachuting model” of the Western researcher who drops onto the reservation, collects data, and leaves, never to be heard from again (Montour & Macaulay, 1988). In most cases, the researchers ignore local knowledge and input; in others, they simply appropriate it. Such was the case in the investigation of the Hanta virus on the Navajo Nation, where U.S. government scientists flew in to investigate the outbreak. After speaking with elders, scientists learned from them that nature was “out of balance” and the reduction of the deer population had led to increases in rodents in homes. This led to the discovery of rodents as the vector of disease, yet the publications that followed did not acknowledge the source of these findings (Alvord & Van Pelt, 1999).

These past (and sometimes present) wrongs committed by academic researchers continue to be a contentious issue in Native communities, where, despite the research dollars flowing into the community to “solve” health problems, disparities between Native health status and that of the general population persist (Castor et al., 2006; Frohlich, Ross, & Richmond, 2006; Jones, 2006; Klesges, Dzewaltowski, & Glasgow, 2008; Okoro et al., 2007; Weiler, Leslie, Krahn, Steiman, & Metge, 2007). In recent years, more attention has been paid not only to the lack of positive results for indigenous communities, but also to the loss of knowledge that can result when we ignore what community members know and understand. For example, Alaskan Natives have long been decrying the melting of the polar ice, but only recently have scientists begun a fruitful collaboration to better capture this knowledge (Cochran & Geller, 2002).

Collaborative evaluation, community-based participatory research, participatory evaluation and empowerment evaluation (Fetterman, 2001; Flicker, Savan, Kolenda, & Mildemberger, 2008; Minkler & Wallerstein, 2003; Weaver & Cousins, 2004) are terms descriptive of an overall approach recognizing the value of community contributions that has gained credence over the past decade. In addition, tribes and Nations have begun to address the need for better communication and collaboration when it comes to research with their peoples, through such mechanisms as tribal research codes and model policies (American Indian Law Center, 1999).

WESTERN SCIENCE, RESEARCH AND INDIGENOUS KNOWLEDGE

American Indians and indigenous peoples throughout North and South America have a tradition of meticulous data collection and naturalistic research. For centuries, Native peoples have been acute observers of the natural world; they have used their discoveries to develop one of the world's more sophisticated botanical pharmacies (Moerman, 1998). In the case of environmental pressures in Alaska, Native methods have been more sensitive than scientific methods at detecting changes throughout the ecosystem (Alaska Native Science Commission, n.d.). Patience, relevance of connections to social patterns, and historical perspective are some of the greatest Native research assets, which relate directly to the scientific concepts of external validity, or context and implementation (Alaska Native Science Commission, 2005).

The current practice of scientific health research, which often focuses on internal validity at the expense of external validity, is under criticism because this emphasis on control divorces results from important contextual issues and limits scientific discovery. A growing movement called *translational research* directly addresses external validity and research-to-practice issues (Woolf, 2008). This highlights an inherent problem with current western scientific practice in that research is compartmentalized; it does not take context into account, meaning that additional research must be done to delineate how to make it work in practice. Community-based, participatory practices are one way to strengthen research designs to take context and implementation factors into account from the beginning of the process, rather than as an afterthought, typically worded as “More research is needed.”

TURNING THE TABLES

Our core staff, a non-Native community-based evaluation consultant working outside of the academic setting and an early career Lakota public health professional employed within a busy community agency, had been working together with the agency's executive director for years to build capacity for developing and evaluating health programs, particularly around youth development and tobacco abuse prevention. As our work in prevention grew, we began to wonder why large grants went to universities for research and evaluation, while limited funds were available to support and build the capacity for community-based organizations (CBOs) to take on more of a leadership role in community-based research.

In the United States, community-based participatory research and evaluation projects almost always originate within the halls of academia. Major funding streams, primarily government agencies, encouraging the use of community-based methods often equate this with the use of community advisory boards or community partners. The level of funding available for community partners is not specified and can vary widely with each grant. However, what does not vary is that most of the grants are awarded to academic institutions rather than community agencies. CBOs are rarely the “lead agency” to receive the funds and function in the primary decision-making role. In some ways, this makes sense and comes from the history of positivist scientific research that places the highest priority on control of conditions (internal validity). Based on the emerging concepts of participatory approaches, we believe that opportunities must be sought out to make substantive change by creating a different type of community-based research with the CBO as the lead agency.

We recognized major challenges that a CBO would face as a lead agent, especially due to lack of infrastructure, but we felt that the challenges could be addressed. We decided to write a grant application for a formative evaluation and research project to explore the high smoking rates among pregnant American Indian women, and to generate ideas for future interventions, modeling the process on a new paradigm (Figure 1). This article describes our experience creating and testing a model based on this paradigm.

One of the key roles that we recognized the need for was “translators.” While translators are most often thought of as sharing information between languages, the authors served the role of *cultural* translators in this community research. We conceptualized our role as individuals well-versed/immersed in two cultures: academic and indigenous. We noted that often the academic world does not recognize that it has a culture, while in reality it has a culture with quite rigid standards of acceptable behaviour and definitions of success. In order for our community process to succeed and to increase the capacity of our CBO, we acknowledged that it would be helpful to understand the requirements of both cultures. We knew that we had to satisfy a “culture of rigour” for the academic/scientific world, as well as a “culture of application” for the indigenous community. Two of us served as translators and leaders in the process, and in this role each brought different strengths: the evaluation consultant, a non-Indian, had 15 years of experience using participatory evaluation methods in community-based projects in Indian communities, and had been working with the lead community agency for over a decade; the health

educator had worked with diverse Native communities on health promotion for several years, was urban-based yet active with her home reservation in Pine Ridge, and had conducted research projects during her undergraduate training. But, perhaps most importantly, we both valued the best in both cultures; we wanted the data to be valid and reliable, to be collected with a consistent protocol and seriously analyzed. We also wanted the data to reflect the complex realities of poor urban Indians living in the modern world, and to paint a larger picture of their lives that would help us understand why smoking rates remained so high.

A MODEL FOR INDIGENOUS LEARNING: CIRCLE OF COMMUNITY RESEARCH

After receiving a community action grant from a progressive Minnesota foundation that encouraged our approach, we began our work to create a new model. We wanted to synthesize the best of indigenous and scientific ways of generating knowledge, and came up with the

Figure 1
Community-based Research Paradigms

Typical “Community” Based Research Process



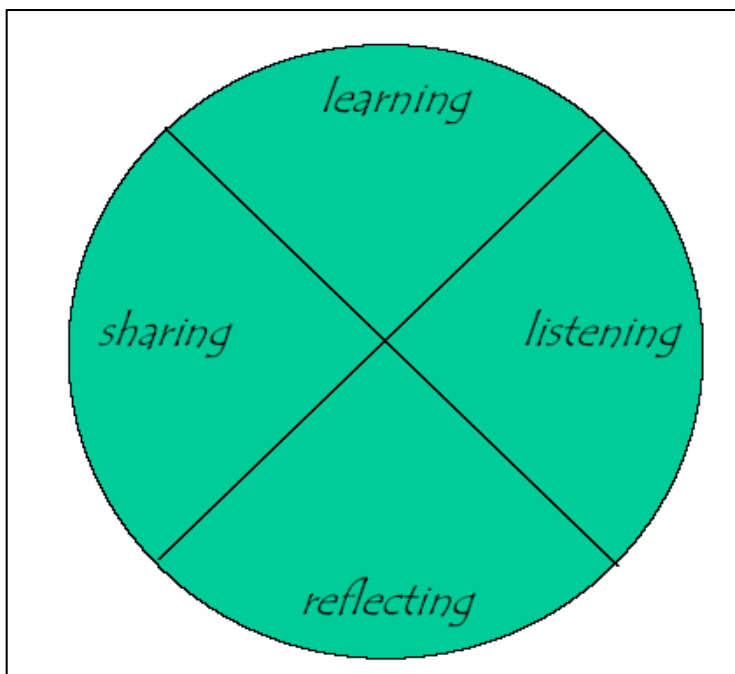
Our “Community” Based Research Process



Circle of Community Research Model (Figure 2) that draws on the holistic philosophy of indigenous people as well as core concepts from applied research and evaluation, including engagement of stakeholders, creating evaluation questions, determining appropriate methods, and disseminating results (Centers for Disease Control and Prevention, 1999; Patton, 1997). We sought to use a research process that draws on indigenous ways of knowing and allows American Indians to describe their views of the issue within the context of Western scientific methods (Alaska Native Science Commission, 2005).

The circle is an important Native symbol that is used by almost all Nations and tribes. The medicine wheel is a specific type of circle used by many indigenous peoples, especially in the Northern United States and Canada. The medicine wheel is both scientific and symbolic. More than 70 stone medicine wheel structures have been found in archaeological sites in South Dakota, Wyoming, Montana, Alberta, and Saskatchewan, some of which accurately mark the cardinal directions and measure motions of the stars and sun (<http://solar-center.stanford>).

Figure 2
Circle of Community Research



edu/AO/bighorn.html). The medicine wheel is also used symbolically in ceremonies and cultural teachings. The wheel is divided into four directions that represent growth, life, and balance, with each aspect of the circle as respected and attended to as any other. In our model, we wanted to emphasize that each aspect of the research and evaluation process is critical and no one segment stands alone or is more privileged than another. That is, the same respectful attention is to be provided to each core component of listening, learning, reflecting, and sharing. Unlike much of Western science, our model includes a core focus on disseminating (“sharing”) the information back to community members. For many indigenous cultures, to share what you learn is what makes it knowledge.

APPLICATION OF THE MODEL

Phase One: Learning (Problem Definition)

This phase of the research circle focuses on learning not only about a community issue (in our case the high rates of smoking during pregnancy by Native women), but also about community research in general. To lay the groundwork for the problem definition, the translators analyzed birth certificate data and created a visual method in a slide show format to share the results with community groups. We discussed the best use of our translator roles, and recognized the importance of a Native woman serving as role model for other Native women; thus, the project director took on the leadership role of working most directly with community members as project director. She visited community agencies with her “traveling show,” and used the opportunity to recruit women to take a more formal part as members of our Community Research Team (CRT). Eleven Native women joined the team. The majority (72%) were Ojibwe, smoked cigarettes, and had a high school education or less. Ages ranged from 19 to 55, with approximately 50% over 30. In addition, the executive director of the CBO, a state health department representative, and a University of Minnesota public health professor were considered “project partners” and participated in CRT meetings as advisors.

The Learning phase moved into a review of potential methods for community research. Our philosophy was to allow the CRT to increase their knowledge about evaluation and research methods in order to actively participate in decisions from the beginning, so we facilitated several meetings to educate women about research methods. The methods included standard techniques such as focus groups, in-depth

interviews, surveys, observations, oral histories, and smoking diaries, as well as cutting-edge research techniques including creative arts, talking circles, and Photovoice.

After small and large group discussions, the CRT decided to use talking circles and Photovoice in their community research. The community members felt these methods were a more comfortable fit with the cultural values of storytelling and listening. They were drawn to the idea of photography and group reflection as a combination of non-verbal and visual methods to gather data about their lives within their community setting. At the same time, the research team was a bit nervous about starting off with these labour- and resource-intensive methods. However, one research partner noted, “We have to trust the process—this is what the community chose.” A brief description of each method follows:

Talking circles gather community members into a circle, initiate the circle through a purifying ceremony, and then provide space for sharing personal issues inspired by spiritual and emotional truth. The setting seeks to give members a safe and open forum to share their thoughts and feelings and to listen and be listened to in a sincere, uninterrupted manner. Often, they are conducted by a respected individual or elder. The talking circle, a traditional practice for many but not all tribes, has spread to become relatively common throughout Indian country. Because of the group aspect, they have been considered and used by some Indian and non-Indian researchers as similar to standard focus groups. However, our conception of talking circles was not a modified focus group; rather, each member would speak in turn beginning with the facilitator and going clockwise until all had spoken. The way in which a talking circle is different from focus groups or group therapy is the gentleness; there is no confrontation and everything that is said is considered to be the truth. Thus, sometimes a sacred object is passed along the circle and held by each person as they speak to ensure that all that is said is the truth. No active recording (tape or note) would take place during the circle. Instead, the group leader summarized insights and made notes after the circle had ended, with no individual identifying information or quotes used.

Photovoice is a research “process by which people can identify, represent, and enhance their community through a specific photographic technique” (www.photovoice.com). The method aims to (a) enable people to record and reflect their community’s strengths and concerns, (b) promote critical dialogue and knowledge about important issues through discussion of photographs, and (c) reach policymakers. The

process works by training community members on the use and ethics of photography, providing resources and topics for community researchers to photograph their community, and analyzing the photographic data to develop an understanding of community issues along with potential solutions. An important conclusion of the project is to share the results with key community leaders and decision-makers (Wang, 1999; Wang & Burris, 1997).

Phase Two: Listening (Gathering Data)

Recruitment and Training of Community Researchers

The project director interviewed and selected 5 Photovoice researchers (3 CRT members and 2 community-at-large members) and 5 talking circle researchers (4 CRT members and 1 community-at-large member). All of the Photovoice researchers were in their 20s, three had infants and/or toddlers, one was pregnant, and one was male. Four of the Photovoice researchers were smokers.

We provided a two-day training on photography and talking circles, drawing on the partner skills: the university professor presented information on informed consent and the CBO executive director conducted a talking circle, then shared insights with the community researchers on how to conduct their own. Role-plays were used throughout the training as a learning technique, and we spent the afternoon on Day 1 using cameras and taking photographs at the local Indian centre. Those photos were then developed overnight and integrated into the training on the second day. A local Native photographer provided feedback and tips/techniques for improving the photographs.

Study Implementation

We implemented the Photovoice process over the course of two months in the summer of 2003, during which we held weekly sessions. As implemented in our study, community researchers were asked to take photographs of tobacco use in their surroundings, including their family and community. We conducted six Photovoice sessions and held six Photovoice reflection meetings. The project director collected film from researchers to be processed for review at the reflection meetings. Researchers would view their photos and choose two or a series of photos they felt best encompassed the topic or question of the week. Topics included friends/family smoking behaviours and

usage, traditional tobacco usage, and tobacco-related advertisements or media they see in their community.

After conducting only one talking circle, we decided to forego this component of the data collection. The first talking circle drew only 6 participants after recruiting with over 50 flyers put up throughout the community, through word-of-mouth by CRT members, and making contacts with staff at two community agencies.

Phase Three: Reflection (Interpreting Data)

Data Analysis

In our translator role, the authors discussed the different requirements for data analysis and interpretation between our cultures: community and academic. We decided that we would proceed with community analysis of photos using the Photovoice method, but also conduct a “secondary analysis,” using standard qualitative analysis methods for an academic audience. This is primarily because the CRT was not interested in traditional report writing, yet we had to complete a standard research report as required for the grant. In addition, the staff wanted to use standard research methods to see what those techniques would reveal.

1) Community reflection. The project director used the smoking-related photographs to help community researchers “tell a story” about Native smoking, especially during pregnancy. During the Photovoice reflection meetings, the project director used the SHOWeD method to guide discussions; other questions complemented this method based on the nature of the photo. The questions that make up the method are as follows:

- What do you **S**ee here?
- What is really **H**appening?
- How does this relate to **O**ur project?
- W**hy does this exist?
- What can we **D**o about it?

The project director spent a good deal of time building trust and creating an environment in which women could move beyond the more superficial discussions to get at some of the deeper meanings of the photographs. We believe that her cultural background, community connections, and energy for the process greatly helped to facilitate the continued participation of several women who may have easily

stopped participating. She also had to continually remind the community researchers of the importance of this component, and how their reflections would be used to help us improve the health of all Indian women. The director taped and then transcribed each session for use in our secondary analysis, and catalogued the pictures that were chosen and reviewed during each session. All other photos were either photocopied or digitized onto a CD.

2) *Secondary qualitative analysis.* Our additional analysis approached the data through standard academic qualitative methods, although the data being reviewed were transcripts of analyses sessions as well as photographs. At this point, the evaluation consultant took the lead. We were joined by the university researcher, and we each independently reviewed and analyzed the Photovoice session transcripts, using an inductive approach with thematic analysis. The evaluation consultant conducted a more extensive analysis, which included a variation of the constant comparison method that began with listening to the audiotapes of the actual Photovoice sessions, followed by detailed review of the transcripts and review of the chosen photographs (Dye, Schatz, Rosenberg, & Coleman, 2000). An important note is that our focus was a conceptual model that related to action research, rather than grounded theory generation. We wanted to use the data to move to a second phase of formative evaluation research that would test an intervention, rather than continue to refine a theory about high smoking rates.

Phase Four: Sharing (Communicating Results)

We realized that the difference between academic and community perspectives was perhaps the greatest in this final direction of our research circle. For academics, this segment often takes the longest, from the discussions on who will write the results, be first author, submit to what journal first, then second if not accepted, reviews, revisions, and so on. On the community side, our researchers wanted to do something concrete and immediate with the data to make it real, after what seemed to them like so much time and effort to analyze and reflect.

Community Dissemination

The CRT met to discuss how to disseminate the results, with the focus on the most common Photovoice process of exhibiting at a local gallery or agency. The CRT ultimately came up with a different

creative option—put together the photographs into a 2005 calendar to disseminate throughout the community, with a kick-off event scheduled for Mother’s Day.

A planning group of the CRT met weekly to create the calendar. An unexpected participatory approach to using the data evolved from this calendar project: the discussion on choosing themes for each month served as an additional “reflecting” phase of research. The team chose themes after reading through the Photovoice transcripts, and the themes reflected a diversity of key tobacco-related topics: dangers of secondhand smoke, tips for quitting, health effects of smoke, deceptive marketing, protecting kids, and traditional use (including various tribal terms for tobacco). They sifted through the transcripts for quotes and photos to accompany them that would express the theme well. They also decided to highlight one of the 11 Minnesota Indian reservations each month, including educational tips and information on tobacco issues. An example of a monthly photo and quote used in the calendar is shown in Figure 3. This quote shows one of the complex realities in the community: cigarettes have become embedded

Figure 3
Calendar Photo and Quote Used for Community Dissemination



“When I see one guy sitting in a drum group, he lights up and then they all light up. And I know a lot of drum groups, they are just sittin’ around relaxing, watching the pow-wow and smoking a cigarette.”

in social and spiritual relationships, and serve positive functions in the community (e.g., showing generosity and subverting the ban on religious practices). However, the accompanying text of the calendar discussed ways to make powwows smoke-free, and suggested using traditional tobacco rather than cigarette cartons as honourings.

The calendars were disseminated throughout the community, beginning with a walk held in the largest Native subsidized housing unit in the area. Calendars were mailed to tribal presidents and health directors at each of the 11 reservations, as well as local politicians. We distributed all of the first printing and received funds for a second, ultimately disseminating approximately 1,000 calendars during the next year.

Academic Dissemination

When we asked for CRT participation in writing up the results of our work for publication, it was disappointing, but not unexpected, that no one expressed interest. The group felt that their dissemination, which was pointedly for the community, was complete. Thus, the project partners worked together to write up the results, but with “use of the results” as priority, we wrote the article for publication in the state medical society’s journal at the suggestion of the state health department staff person, who knew that this journal was well read by providers in maternal and child health. Our goal was to share both the quantitative and the qualitative results to spur public health action on the issue of high smoking rates among pregnant American Indian women (Scott, Fogarty, Day, Irving, & Oakes, 2005). We also _____ our process at the joint American Evaluation Association and Canadian Evaluation Society meeting in 2005, which helped to develop networks with indigenous evaluators as exemplified by this special thematic segment.

OUTCOMES

Accomplishments

Our project resulted in several positive outcomes, including that we

- completed a research project whose results were disseminated directly back to community members and community leaders, with strong messages particularly resonant within the Native community, covering a wide range of issues on tobacco abuse prevention and cessation

- elicited indigenous knowledge that was used in future grants to develop and evaluate a pilot intervention with innovative programmatic elements for cessation, such as experiencing traditional tobacco use, reducing secondhand smoke in the home, creating social support and messages that draw on the value of protecting children
- empowered the CBO to continue to apply as lead agent for evaluation and research projects, which have expanded from cessation to secondhand smoke initiatives
- enhanced the skills of community members and provided an opportunity for them to discover and share knowledge in their community. In particular, we nurtured the project director, who received her Master's of Public Health and is now a researcher in maternal and child health for her tribe
- enhanced the skills of the non-Indian participants to appreciate the struggles, yet draw on the strengths of the community knowledge.

Lessons Learned

Participation vs. Control

Unlike what other community-based participatory research projects have reported, we did not find ourselves struggling with issues and conflicts around control over technical issues (Brisson, 2008). For example, while we did experience “oscillating control,” we did not feel that this was a dilemma. We posit this is most likely because our project was led by a CBO. In fact, in our case, trust was established very quickly and our issue might better be described as “oscillating participation.” At times, we struggled to emphasize the importance of certain activities or decisions, and had to be patient and wait for community research team members and community researchers to provide input. Perhaps just as important as access to control is the capacity of community members to recognize the specialized skills required at certain phases, and knowing who and when to ask for help. We believe it is important to find a balance in participation versus trust and comfort in allowing some technical decisions to be made by “experts.”

Overloading

While we hoped to complete the talking circles, we were unable to surmount the challenges. The community researchers were busy with their photography and Photovoice sessions and had little time or

energy for recruiting participants for talking circles. While logistical considerations were the most obvious in the decision to suspend this data collection activity, we also had some concerns that the difficulty recruiting participants might be a sign that individuals are unfamiliar with talking circles or consider them more of a spiritual experience that does not lend itself to “data collection.” The project director also noted that that it took time for trust to develop and personal issues to emerge. Perhaps talking circles seemed intimidating for those who have emotional concerns or dilemmas around smoking, and feel reluctant to describe their lack of success or interest in quitting despite knowing the harms caused during pregnancy.

DIFFERENCES BETWEEN OUR MODEL AND ACADEMIC MODELS

Although we have no way of knowing whether the findings of the research would have been the same if conducted in the “typical” academic process, we postulate several potential differences in each of the core research components using our approach (Table 1). In terms of *results*, we believe that our process did not ignore but rather allowed community insights to emerge, even as they uncovered a complex and discomfoting view from a public health perspective. We visually saw evidence of the positive aspects of commercial tobacco used to express core values of generosity and sharing, as well as the common use of cigarettes around children. In terms of the *process*, we would like to highlight examples from our project where we believe that we may have done things differently. Compared to our model, the academic approach

- would not have involved community members in choosing methods, and would likely have chosen simpler and more familiar methods (rather than Photovoice and talking circles).
- would not have used community members to lead and implement data collection nor provided the opportunity to engage in analysis. Different decisions would have been made for expedience—for example, not holding sessions with children present or rescheduling, not being able to motivate and inspire women, potentially losing participation.
- may not have been flexible enough to create a new method to achieve informed consent—we used tape recorders because of the reluctance of many Native people to “sign a paper.” We also provided IRB contact information on an artful, Native-designed postcard that folks would be more likely to actually keep.

- may not have strayed from the Photovoice “protocol” of having an exhibit of the photos instead of preparing educational dissemination output that reached many more diverse community members than would come to an art show.
- may not have been able to engage community members enough to get the trust to describe the more complex issues, such as the many positive aspects of smoking (pleasure, social engagement, social status), how cigarettes are embedded in social relations, and the reality of incessant smoking around children.
- would probably not have been able to role-model the research process being led by a Native woman to other Native women,
- would not have moved budget items from infrastructure or staff so that individuals in the community could create materials and events to make sure their results were disseminated to other low-resource women and agencies within their networks.
- would not have empowered and built infrastructure for the CBO to continue doing research to develop and test an intervention for cessation.
- would not have encouraged and mentored the project director to serve in the core leadership position in the project.

The Circle of Community Research model that we set out to test provided us with important and, in some cases, unexpected outcomes. Community-based practitioners, especially evaluators who have academic “credentials” along with experience dealing with the complexities of the real world of non-profits, should consider contributing their skills as “translators” to community-based agencies. We are hopeful that experienced community evaluators can take on this

Table 1
Contrasting Two Approaches: The Academic and Our Process for Community Research

	Academic process	Our process	Pros/cons of our process
Administration	-Academic partner receives funds and makes decisions on budget -Academic partner receives “overhead” to help fund existing infrastructure	-CBO receives funds and makes decisions on budget -CBO receives “overhead” to fund infrastructure	-CBO builds infrastructure -CBO may have internal struggles related to lack of experience or understanding of knowing where to put resources to build infrastructure

	Academic process	Our process	Pros/cons of our process
Methods (learning)	-Decisions made by research experts with priority on logistics and technical issues	-Decisions made by community members with equal priority given to technical issues and resonance with community values (rather than logistics)	-Methods may yield more valid data -Chosen methods may require additional expertise -If logistics not considered, may overload resources
Data collection (listening)	-May use community members to collect data -Use community advisory group to help develop sample	-Train community members to collect data -Work with community agencies and individuals to recruit participants	-Community members engage peers and reach new subjects -Data reflect real-world context and complications -More resources required—to train and to monitor on data collection -“Turf” issues between CBOs may inhibit community participation
Data analysis (reflecting)	-Academic partner conducts analysis and generates results -May or may not include community advisors in a final review	-Community members analyzed the data and created a product to disseminate which resonated with their networks (calendar) -Translators analyzed the data using standard qualitative analysis techniques to describe the complex reasons for high smoking rates	-Results in multiple views of data for more immediate, multiple uses -Empowers community members to participate in generating data and be reflective about community conditions -Requires patience and persistence -Requires 2 separate processes -Need to develop quality control and confidentiality checks, depending on type of data
Reporting results (sharing)	-Focus on publishing in the scientific literature -Share final report with community advisory group and may ask for input before finalizing -Often use data to write additional academic-based grants	-Focus on community dissemination -Publish in action-oriented academic publication that encourages local action -Conference presentation with practice-oriented evaluators -Created conceptual model to write formative evaluation grant for cessation program	-Community members engage and build sense of ownership in results of research -Community members work hard to see that the results actually reach community members and leaders -Results used immediately in “unexpected” educational format -Creative format more likely to be read than a final report -CBO less likely to publish in scientific journals
Timeline	-Academic process moves more quickly through first two phases (methods to collection) but then moves more slowly through analysis and reporting	-First two phases require large amount of time to prepare and mentor community researchers -Last phase moved quickly due to interest in using the results -Formative evaluation results immediately focused into an application grant	-CBO process finds immediate and relevant ways to disseminate data -CBO process can be logistically complicated—requires resources and time to manage the project

challenging but rewarding role to help Native agencies become empowered to participate in meaningful ways in research that will stop the parachutes from falling, and begin to make headway in reducing health disparities.

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