

## ARTICLE

### APPROACHES TO COMMUNITY-BASED PARTICIPATORY RESEARCH IN A FOOD SOVEREIGNTY INITIATIVE IN SOUTHCENTRAL ALASKA

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#### ABSTRACT

Alaska Native/American Indian (AN/AI) peoples have a historical mistrust of research, in part due to past research misconduct involving AN/AI communities and colonial oppression. One approach to mitigating historical mistrust is community-based participatory research (CBPR), which centers community voice in the determination of research priorities and conduct of research activities. This report describes the CBPR elements of an Indigenous food sovereignty project at a tribal healthcare organization in Southcentral Alaska. A landscape analysis of regional Indigenous food sovereignty activities was followed by the assembly of a community advisory board (CAB) comprised of key community stakeholders. This CAB identified and prioritized potential intervention strategies to strengthen Indigenous food sovereignty based on the landscape analysis. Ultimately, the CAB elected to host a conference as the most appropriate intervention approach. The research team worked in tandem with the CAB to select workshop topics, nominate appropriate speakers, draft invitations, and finalize the intervention evaluation strategy. This article describes the CBPR methods applied in this study alongside an overview of the conference itself and its evaluation data. In this study, CBPR contributed to research success as defined by the evaluation outcomes, although the time and effort required for CBPR necessitated flexibility from the funder.

## INTRODUCTION

This article presents a case study of how a tribal health organization in Alaska used community-based participatory research (CBPR) in a healthcare research project named the Center of Indigenous Innovation and Health Equity (CIIHE), a multisite AN/AI community-driven Indigenous food sovereignty initiative, of which the authors are a part. Indigenous food sovereignty refers to a “movement [that] seeks to revitalize traditional growing and gathering practices and reverse the tide of unhealthy eating caused by the historical loss of tribal lands” (Jernigan et al. 2022:2). Indigenous food sovereignty can also be defined as the rights of Indigenous peoples to determine their own food systems in a “community-led movement with its roots in sovereignty and traditional Indigenous knowledge... [that] directly intervenes upon systems-level barriers to health” (Jernigan, Nguyen, Maudrie et al. 2023:1071). This report will focus on the CBPR aspects of one part of the CIIHE initiative, as explained below, and expands on the information presented in Wark et al. (2023) to provide additional details about the CBPR methods used in this project.

Alaska Native and American Indian (AN/AI) peoples have a history of distrust with research (Dillard et al. 2018:6). One way to approach improving the relationship between AN/AI peoples and researchers is CBPR (Blacksher et al. 2016; Rasmus 2014). One reason for this history of distrust stems from unethical research conducted on AN/AI peoples, especially in healthcare (Dillard et al. 2018) along with colonial oppression and mistreatment (Rasmus 2014). Three of the most famous examples of unethical healthcare research in Alaska are the radioactive iodine study and the Barrow Alcohol Study (Dillard et al. 2018). In 1956–57, 102 Alaska Native people in Fairbanks were injected with iodine-131, a radioactive isotope, as part of a U.S. Air Force study to understand the effects of cold on human physiology. In this historic example of research misconduct, the subjects, including children, did not provide adequate consent to the study “even according to the standards of the time” (Dillard et al. 2018:7), nor were they informed of the risks to their health (e.g., thyroid cancer). In fact, many were told the injections were medical care, not research. In 1979, the city of Barrow, Alaska (now Utqiagvik), contracted an outside research firm to help them understand alcohol misuse in their community. The researchers released the final report at the same time they gave an interview to the *New York Times*, which ran

a front page story proclaiming “Alcohol Plagues Eskimos” (Sobel 1980), stating:

The Inupiaq Eskimos of Alaska’s North Slope... are “practically committing suicide” by mass alcoholism... where violence is becoming the most frequent cause of death as a result of ‘the explosive and self-destructive abuse of alcohol,’ the researchers said. “Offshore oil development is expected to peak in 2010 or 2015”... one of the researchers said at a news conference. “We don’t see the Eskimos surviving till then. This is not a collection of individual alcoholics, but a society which is alcoholic, and therefore facing extinction.” (Sobel 1980:C2)

While the radioactive iodine injections posed health risks to participating individuals, the inflammatory language of this article caused additional reputational and emotional harm, both to individuals in Utqiagvik and to the community as a whole. Following this study, “many AN [Alaska Native] people hesitated to participate in research, particularly research about sensitive topics like alcohol misuse” (Dillard et al. 2018:8).

Perhaps a less well known but no less egregious example of medical experimentation on Alaska Native peoples is the bacillus Calmette-Guerin (BCG) tuberculosis (TB) vaccine trial that was conducted between 1935 and 1956 (Hadden 2018). TB devastated AN/AI communities in the nineteenth and early twentieth centuries. In 1935, the rate of TB among Alaska Native peoples was 12 times the national average (Hadden 2018:63–64). The BCG vaccine was a promising new way to prevent TB outbreaks, but it was not clear how best to administer the vaccine. So, researchers tested out various formulations and administration procedures (e.g., needle size, etc.) on 3,008 AN/AI children, of whom 981 were Alaska Native children in Southeast Alaska, without the informed consent of the families or knowledge that this was an experimental procedure. The research project was continued through the 1990s, when many of those children, now Elders, were approached for follow-up, at which time they became aware for the first time that they had been subjected to unethical research. Tlingit, Haida, and Tsimshian anthropologist Eleanor Hadden (2018) interviewed several people from this study as well as their children, grandchildren, and, in one case, the parents of children who had been experimented on. She heard a range of views on the study, including anger over how the research had been conducted; uncertainty regarding how AN/AI communities benefited from the study (especially since the BCG

vaccine was never really implemented [Hadden 2018:73]; and suspicion of the Indian Health Service, presumably over its role in the research. They also felt that future medical research on AN/AI peoples needed to be closely monitored by the affected communities.

Another famous case of unethical medical research with American Indian peoples is the Havasupai case (Garrison 2013). The Havasupai are a tribe that lives in the Grand Canyon in Arizona. They contacted Arizona State University (ASU) in the early 1990s to help them understand diabetes in their community. Biological samples were collected and analyzed, but little came from that study. In the early 2000s, a Havasupai community member found out that these biosamples were subsequently used by ASU in additional research without the informed consent of community members. These subsequent studies included examinations of schizophrenia, inbreeding, and migration, all taboo topics among the Havasupai. The tribe sued the research team for return and destruction of the samples, but again, reputational and emotional harm were done and the community was stigmatized.

Of course, there are also examples of unethical or harmful research with AN/AI peoples in the discipline of anthropology. Perhaps the most widely publicized example from Alaska is the work of Aleš Hrdlička, a physical/biological anthropologist who worked for the Smithsonian Institution. According to the Kodiak Area Native Association (KANA n.d.):

In the 1930s, Ales Hrdlicka [sic] removed 756 human remains from Larsen Bay's cemetery, despite the objections from the community, and took them to the Smithsonian Institution in Washington, D.C. Hrdlicka was the curator of the U.S. Museum of Natural History at the time, and has since been recognized as disrespectful and dismissive of Native peoples. The Larsen Bay Tribal Council formally requested the return of the remains in 1987, and after negotiations and some resistance from the Smithsonian, the remains were returned to Larsen Bay in 1991 and reburied.

April Laktonen Counciller, executive director of the Alutiiq Museum and a descendant of Larsen Bay, has expressed even stronger negative views of Hrdlička's work: "He's thought of, kind of like, as a ghoul" (Dungca et al. 2023). The *Washington Post* adds that he "considered people who were not White to be inferior" (Dungca et al. 2023). The legal battle between the people of Larsen Bay and the Smithsonian, which led to the passage of the Native American Graves Protection and Repatriation Act

(NAGPRA) in 1990, is discussed in a collection of articles put together by Bray and Killion (1994). While not a result of unethical research per se, there are also numerous other examples of harmful research in anthropology, such as unreturned ancestral remains that tribes wish to repatriate under NAGPRA, which has resulted in heartache between AN/AI peoples and archaeologists (Crouse 2021a, 2021b). Tlingit anthropologist Rosita Worl stated, "In my time on the [NAGPRA] review committee, I was in meetings across the country. And it was just heartbreaking. And you know, almost every meeting where we would have Tribal members begging for the return of their ancestral remains... Native Americans across the country would be just pleading, you know, please return our ancestors" (Crouse 2021b).

Despite this ill will and distrust from past injustices, AN/AI peoples do engage in research as both participants and investigators. However, overcoming that distrust requires careful consideration of how research is structured and carried out. One promising approach to overcome the hesitancy of AN/AI peoples to engage in research is community-based participatory research (Blacksher et al. 2016; Christopher et al. 2012; Rasmus 2014). Blacksher et al. (2016:306) lay out several principles of CBPR with AN/AI communities, including to "respect tribal sovereignty, promote transparency, hear community priorities, learn from each other, and take collective action." They also discuss the importance of spending time building trust, which can take years of formal and informal engagement "before, during, and after a study" (Blacksher et al. 2016:307). In other words, CBPR not only includes communities but ought to be driven by them and is not a one-off consultation but an iterative process that takes time. Rasmus (2014:4) is careful to point out that her article on a CBPR-informed healthcare intervention is not meant to be a blueprint for how to conduct CBPR in Indigenous communities. Nevertheless, many of Blacksher et al.'s principles of CBPR are demonstrated in Rasmus's article; the following are just a few examples of those principles. Rasmus and her team spent years working in neighboring communities in the region (the Yukon-Kuskokwim Delta) and many months building relationships with the community before their healthcare intervention began, and they continued to visit the community and participate in community life throughout the project. The community was involved as active leaders throughout the project, from design to implementation to evaluation, and crucially, Elders were an integral part

of discussions and decision making. In this manner, the research was set up as an equitable partnership between the university researchers and community members, with both learning from each other. Indigenous values were integrated into the project design through team meetings in a process the community referred to as “Indigenizing” the research process.

There have of course been exemplary projects within the discipline of anthropology that implement similar approaches to collaborative, community-driven research. One such project is the Nunalleq archaeological dig in Quinhagak, Alaska (Basile et al. 2018; Bean 2023; Cotsirilos 2018; Erickson 2023; Milligan 2017; Nalaquq n.d.). Nunalleq, or “Old Village” in Yup’ik, is a collaboration between the Qanirtuuq Corporation (the Alaska Native Claims Settlement Act [ANCSA] village corporation for Quinhagak), the village of Quinhagak, and the University of Aberdeen. It is a 15-year-long, ongoing effort to collect and preserve the seventeenth-century village site near Quinhagak that is threatened by erosion. More than 100,000 artifacts have been recovered and are now stored locally at the Nunalleq Culture and Archaeology Center Museum in Quinhagak, making it the largest collection of prehistoric Yup’ik artifacts in the world (Hillerdal et al. 2023). There is also a virtual collection of approximately 6,000 digitized artifacts and interpretations available at the Nunalleq Digital Museum (Hillerdal et al. 2025). The experience working on the Nunalleq site led Qanirtuuq Corp. to establish Nalaquq LLC, an archaeological and cultural resource management consultancy firm operating across Alaska. This project clearly demonstrates Blacksher et al.’s principles of CBPR: it respects tribal sovereignty, fills community priorities, promotes bi-directional learning, has worked over years to establish trust, and has led to collective action.

CBPR was extensively used in the CIIHE project, which is led by the Oklahoma State University (OSU) Center for Indigenous Health Research and Policy (CIHRP). The OSU CIIHE 1.0 project had four partner sites: the Osage Nation of Oklahoma, the Choctaw Nation of Oklahoma, the University of Alaska Fairbanks Center for Alaska Native Health Research, and the Southcentral Foundation (SCF). CIIHE 2.0 has since been funded for an additional five years, with OSU adding five new partner communities (CIHRP n.d.): the Nome Eskimo Community, the Yurok Tribe, Indian Health Care Santa Clara Valley, Turtle Mountain Community College, and

Dream of Wild Health. This report focuses on the CBPR aspects of the CIIHE 1.0 project carried out by SCF, a tribal health organization headquartered in Anchorage, Alaska. Hereafter, CIIHE will refer to the SCF CIIHE 1.0 project unless stated otherwise.

## METHODS

CIIHE is considered a quality assurance/quality improvement (QA/QI) project, not human subjects research. Project approval was secured through the SCF review process, and the project was deemed exempt from Alaska Area Institutional Review Board (AAIRB) review since it does not meet federal standards of research (i.e., no human subjects were involved, no systematic data was gathered, and no generalizable knowledge was created). The AAIRB defers to SCF research review for determinations of nonresearch. While CIIHE is not considered human subjects research, the project followed a CBPR approach that yielded many valuable lessons and insights. It also accords with the principles of Indigenous research methodologies (Wilson 2001) and decolonizing research (Porsanger 2004), which will be discussed at the end of this report.

## SETTING

SCF is an Alaska Native-owned, nonprofit health care organization serving approximately 70,000 predominantly AN/AI people living in Anchorage, the Matanuska-Susitna Borough, and 55 rural villages in the Anchorage Service Unit. Incorporated in 1982 under the tribal authority of Cook Inlet Region Inc. (CIRI), SCF is the largest of the CIRI nonprofits, employing more than 2,700 people in over 80 programs. SCF provides a wide range of health and wellness services, including medical, behavioral, dental, and traditional healing practices. SCF research addresses a wide variety of medical and behavioral health topics aligned with SCF’s family wellness objectives. The SCF research review process ensures research carried out by SCF staff or with SCF customer-owners (i.e., patients) is respectful, beneficial to SCF, and protects customer-owner’s rights and privacy (Hiratsuka et al. 2017). Recent SCF research studies have looked at heart health, substance use treatment, suicide prevention, the ethics of genomic research with AN/AI peoples, and diabetes. Four SCF research staff worked on the CIIHE project.

**CIIHE 1.0 OVERVIEW**

The OSU CIIHE initiative has a focus on Indigenous food sovereignty. The original CIIHE 1.0 partners contributed to a special issue of *Health Promotion Practice* (vol. 24, issue 6), which included articles describing the work conducted during the grant and general articles about Indigenous food sovereignty, as well as articles from the sister CIIHE project run by the University of Hawai'i. See Jernigan, Demientieff, and Maunakea (2023) for an introduction to the special issue and Wark et al. (2023) for a short synopsis of the SCF CIIHE 1.0 project.

Conceptually, the OSU CIIHE initiative is guided by the Food Sovereignty and Health Framework (Fig. 1) (Jernigan, Demientieff, and Maunakea 2023).

SCF's program evaluation team, in collaboration with SCF Research, have recently begun to develop program-specific logic models based on Indigenous evaluation principles. The CIIHE initiative as a whole was guided by the Indigenous evaluation framework (LaFrance and Nichols 2008; LaFrance et al. 2009). "This framework has helped evaluators build trust and ownership of the evaluation and ensures the evaluation is built in response to cultural values and priorities" (Wark et al. 2023). Specifically, their framework encourages developing evaluation models based on metaphors from Indigenous cultures. The CIIHE

project's Indigenous logic model is presented in Figure 2. This model incorporates elements of Indigenous ways of knowing such as described by the Tapestry Institute (n.d.) and the model presented in Marsh et al. (2015), who situate their research activities within a metaphorical framework based on the four-part medicine wheel symbol common to many Indigenous North American societies.

**CBPR APPROACH TO CIIHE**

This study used a CBPR approach, which focuses on building relationships between research partners and communities and plays an important role in expanding the reach of translational intervention and implementation sciences to inform practices and policies for eliminating disparities (Wallerstein and Duran 2010). Indigenous CBPR is a time-intensive process. SCF followed three general steps in the CIIHE project (Wark et al. 2023): (1) conducting a landscape analysis, (2) forming a community advisory board (CAB), and (3) hosting the 2023 Traditional Foods Gathering conference.

A landscape analysis was conducted from February to August 2022 to understand the work already being done around Indigenous food sovereignty at SCF, the Alaska Native Tribal Health Consortium (ANTHC), and elsewhere in the wider community. The landscape

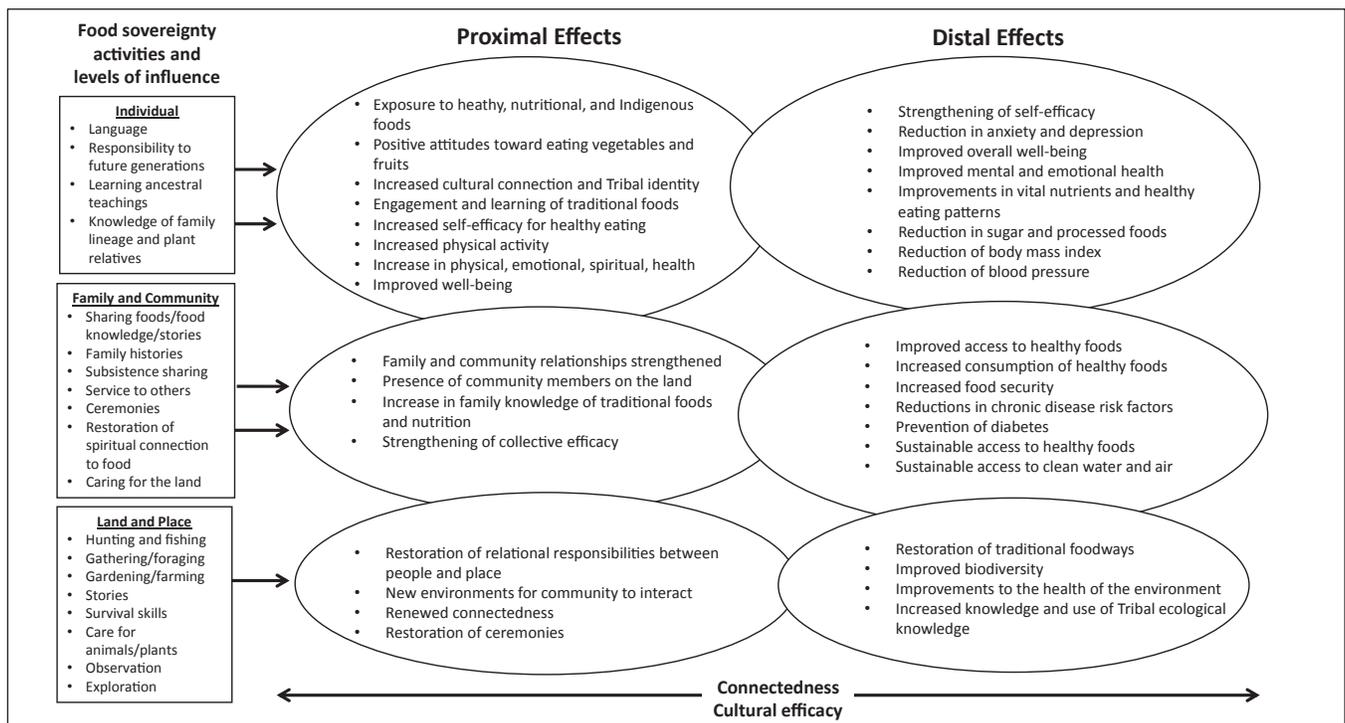


Figure 1. The food sovereignty and health framework

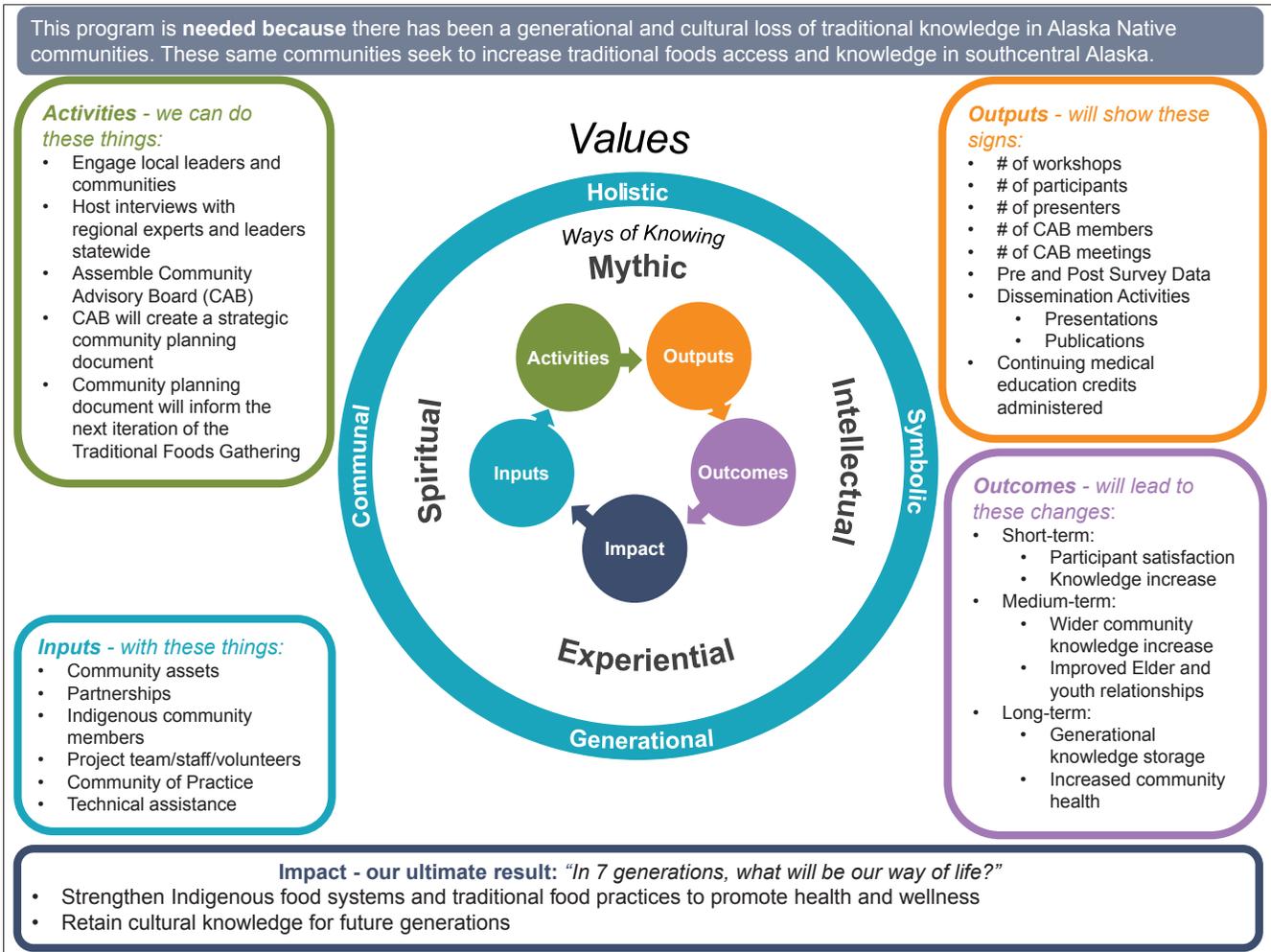


Figure 2. SCF CIIHE project Indigenous logic model

analysis consisted of informal conversations with seven groups of stakeholders (Table 1). Two prompts were used to facilitate discussions: “What is already being done/have you been involved with in Alaska around food sovereignty, diet, and health?” and “What is your interest in partnering with us on this grant around food sovereignty, diet, and health?” Each partner’s efforts are summarized in the table below, which was first published in Wark et al. (2023). The activities conducted by these stakeholders were significantly impacted by the COVID-19 pandemic, and the table includes both pre- and postpandemic activities.

Some themes to pull out of Table 1 include the following. There was an emphasis on supplying Elders with traditional foods, and Elder knowledge about traditional foods was highly valued. The importance of traditional foods to healthy diets was recognized. Gardening was utilized as a way to supply healthy foods and to promote physical activity. Conferences were widely used to share

information about traditional foods. And multimedia, especially video recordings, were leveraged to share information about traditional foods.

After the landscape analysis was complete, a CAB was assembled with representatives from all seven stakeholder groups. The CIIHE CAB consisted of 11 members, plus several alternates. The CAB met six times from August 2022 to May 2023 and approximately five to eight CAB members (average of six) were present at each meeting.

The agenda of the first CAB meeting included a review of the landscape analysis results. This activity allowed the CAB members to familiarize themselves with each other’s work. We presented several intervention ideas based on the existing work discussed in the landscape analysis and had CAB members vote on their preferences. Project ideas included addressing any of the following:

- Teach traditional food harvesting and processing skills
- How to establish a U.S. Department of Agriculture-recognized traditional food processing center

*Table 1. Findings from landscape analysis of food sovereignty efforts in Southcentral Alaska. This table was first published in Wark et al. (2023). SCF = Southcentral Foundation, ANTHC = Alaska Native Tribal Health Consortium.*

Partner	Efforts
SCF Elder Program	<p><b>Organizes large traditional food donation program for Elders</b> (redistributes community donations to Elders, or serves them at community lunches)</p> <p>Maintains a garden for both food consumption and Elder activities</p> <p>Partners with local botanical garden for berry picking</p>
SCF Health Education	<p><b>Focus is on healthy diets</b></p> <p>Signature program is “Dinner Makes a Difference” food preparation demonstrations for community members and schools</p> <p>COVID forced turn to virtual classes featuring more traditional foods</p> <p>Also offers plant starts for home gardening</p>
SCF Dieticians	<p><b>Work focuses on specific topics such as diabetes, blood pressure, etc.</b></p> <p><b>Recognizes the value of traditional foods</b></p> <p>Often shares “The Foods We Eat” traditional food guide with patients, which has recipes and harvesting guidelines</p> <p>Also refer folks to local university’s cooperative extension program for practical tips on how to process, cook, and preserve traditional foods</p>
SCF Traditional Healing	<p><b>Focus is on spiritual dynamics of traditional plants</b></p> <p>Co-sponsor of the Tikahtnu Plants Symposium, which has Elder speakers, workshops with practical tips around traditional foods, etc.</p> <p>Maintains a garden of traditional plants for teaching both practical tips of harvesting plants, as well as spiritual dynamics of harvesting plants</p>
ANTHC Healthy Communities	<p><b>Mostly works with traditional plants</b></p> <p>Collaborates extensively with the Alaska Food Policy Council (AFPC)</p> <p>AFPC hosts an annual conference on food issues, which lately has more focus on Indigenous food sovereignty</p> <p>AFPC also maintains a garden of traditional plants in Anchorage</p> <p>Co-sponsor of Alaska Plants as Food and Medicine conference for six years</p> <p>Developed “Store Outside Your Door” online video series—has chefs demonstrate modern recipes for traditional foods</p> <p>Has program that works with federal agencies to replace items in Supplemental Nutrition Assistance Program (SNAP) food boxes with local traditional foods (e.g., Kodiak Island halibut)</p> <p><b>Also has traditional food donation program for Elders</b></p>
Outside researcher one	<p><b>Primary does photo-voice work capturing Indigenous knowledge</b></p> <p>For example, Calricaraq program in Yukon-Kuskokwim Delta region captured Elder insights into how consuming traditional foods benefits emotional, spiritual, and physical health</p> <p>Also developed “<b>Tundra to Table</b>” program which created videos that focus on different plants—these videos provide moms with community knowledge, nutritional content, and what kids know about the plants</p>
Outside researcher two	<p><b>Instrumental in developing many projects and programs described above</b></p> <p>Worked with ANTHC and SCF on the Alaska Plants as Food and Medicine Conference, which later became the Tikahtnu Plants Symposium</p> <p>Helped develop “Store Outside Your Door” video series</p> <p>Spoke to an increasing alignment between Western medicine and traditional plant knowledge—even the modern cancer drug, tamoxifen, came from Northwest Coast medicinal knowledge of yew tree bark</p>

- How to set up a traditional food distribution network
  - How to use gardening to increase access to fresh produce
  - How to generally improve the diet of Alaska Native peoples
  - Exploration of state and federal regulations around traditional food harvesting
  - Exploring local or multiregional conferences on the topic of food sovereignty and traditional uses of plants and animals
  - How environmental toxins and contaminants may affect traditional foods
  - Exploring traditional food consumption in urban areas
  - How to protect Alaska Native knowledge of plants as food and medicine
- After an initial vote on these topics, a short list of project ideas was generated. One of the CAB members helped us develop several logic models to outline specific project ideas (Table 2).
- From this short list, CAB members ultimately selected hosting a new conference focused on traditional foods, which came to be known as the Traditional Foods Gathering. The study team also decided, based on the short list of items, to produce videos of the workshops hosted at the conference and share the videos online. The CAB then produced a list of topics they would like to see workshop presentations cover, nominated speakers who

*Table 2. Draft logic models for project ideas in CIIHE 1.0*

Input Needed to Make Activity Happen	Activity	Short-term Impact	Long-term Impact	Need/Outcome
Who can share information on these topics? What topics will be covered? Who will be invited? Will proceedings be disseminated? How?	Conference workshop/culture camp session on topic of traditional foods	Workshop/camp attendees gain knowledge of topics shared in presentation	Wider community gains information about topics shared	Gaining knowledge of traditional foods, etc. improves diet, mental and physical health, cultural connection, etc.
Who can share information on these topics? What topics will be covered? Who will be invited? Will proceedings be disseminated? How?	<b>Grant-specific event hosted by the study team</b>	Event participants gain knowledge of topics shared in presentation	Wider community gains information about topics shared	Gaining knowledge of traditional foods, etc. improves diet, mental and physical health, cultural connection, etc.
Who can share information on these topics? What topics will be covered? Who will be invited? Will proceedings be disseminated? How?	Session with Southcentral Foundation interns or other youth group	Interns gain knowledge of topics shared in presentation	Assisting development of youth into healthier, more culturally connected adults	Gaining knowledge of traditional foods, etc. improves diet, mental and physical health, cultural connection, etc.
Who can share information on these topics? What topics will be covered? Who will be invited? Target audience? How will proceedings be disseminated? Who will “own”/gatekeep the product?	<b>Produce video</b> of discussion, walking tour, practical skills demonstration, etc. (e.g., fish camp, health and safety instruction)	Long-term storage of traditional knowledge for future generations	Creates tool for continuing education on topics shared	Sharing traditional knowledge of plants, etc. improves diet, mental and physical health, cultural connection, etc.
Who can share information on these topics? What topics will be covered? Who will be invited? Target audience? How will proceedings be disseminated? Who will “own”/gatekeep the product?	<b>Develop website</b> that can share the information on various topics	Long term storage of traditional knowledge for future generations	Creates tool for continuing education on topics shared	Sharing traditional knowledge of plants, etc. improves diet, mental and physical health, cultural connection, etc.

could cover those topics, and generated ideas for who to send targeted invitations to attend the conference, in addition to general announcements about the event (e.g., to all SCF and ANTHC staff). See Table 3 for details about the CAB-identified priorities for the Traditional Foods Gathering.

## RESULTS

For the evaluation of the Traditional Foods Gathering, anonymous pre- and postconference surveys were administered to attendees; the surveys were available in person

or online per attendee preference. These surveys included self-reported measures of familiarity with traditional foods, food sovereignty, diet-related health, engagement with the conference workshops, and project outcomes such as consumption of traditional foods and transmission of traditional knowledge and practice. Items were measured on four-point Likert scales, as well as some open-ended comment options, and data were harmonized so “positive” responses indicate Agree or Strongly Agree. Pre/post responses were not linked at an individual level, so analysis was limited to comparing medians and modes of the Likert-type data.

*Table 3. Community-driven priorities for Traditional Foods Gathering conference*

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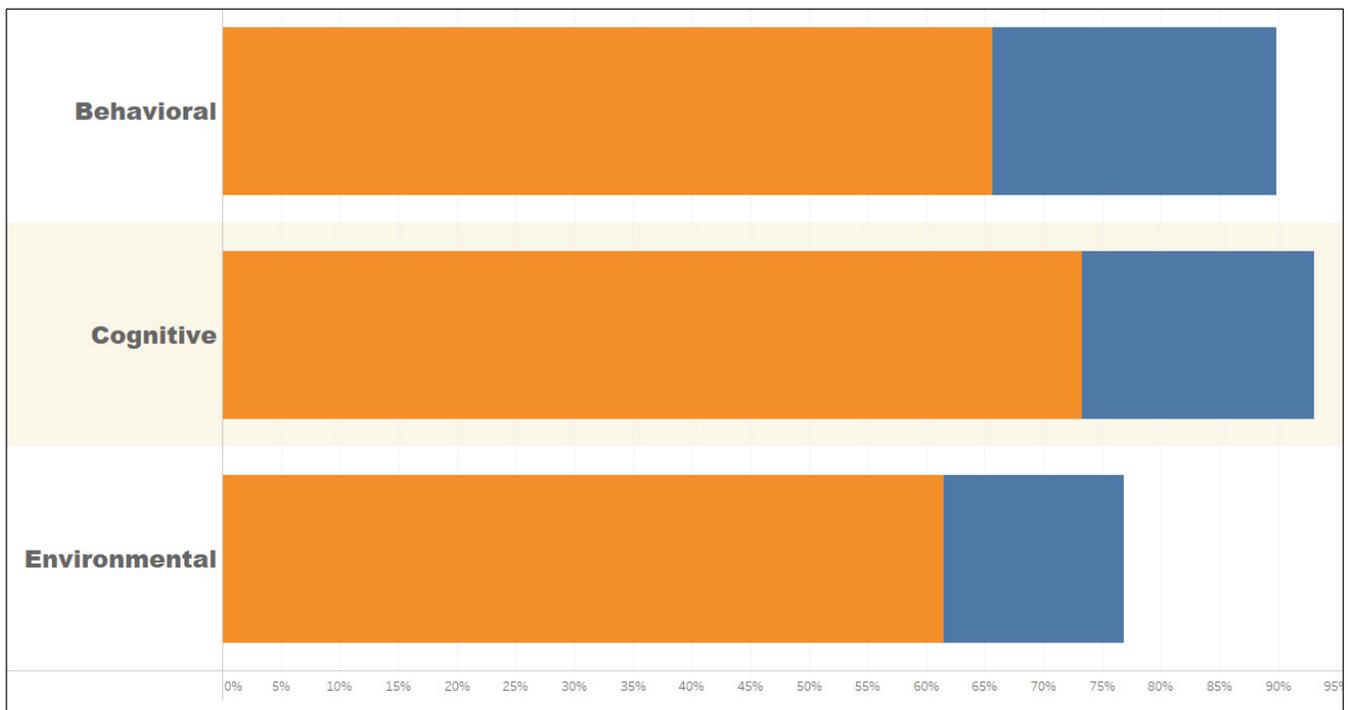
<p><b>What topics will be covered?</b></p> <ul style="list-style-type: none"> <li>* Elder stories of growing up immersed in traditional food ways</li> <li>* Spirituality and traditional food ways</li> <li>* Development of “Store Outside Your Door” video series</li> <li>* How to engage in traditional foodways while living in urban areas (“access, knowledge, infrastructure” triumvirate)</li> <li>* “Culture/food is medicine”</li> <li>* Health benefits of traditional foods</li> <li>* Developing curricula for school-age kids/culture camp participants to learn about traditional foodways</li> <li>* Food security</li> <li>* Protecting Indigenous knowledge</li> <li>* Train the trainer for transmitting traditional knowledge</li> <li>* What are the gaps in the net?</li> <li>* Celebration of traditional foodways</li> <li>* Youth health/diet of school-age kids</li> <li>* Social-emotional learning through plants</li> <li>* Connections between food and language</li> <li>* Evening hike for local plants, even not picking but learning to identify and how to use</li> <li>* Indigenous food committee</li> <li>* Food sovereignty</li> <li>* Elders</li> <li>* Native Farm Bill Coalition, advocacy</li> <li>* Seaweed/kelp farm, mariculture</li> <li>* Traditional food processing center</li> </ul>
<hr/> <p><b>Who will be invited?</b></p> <ul style="list-style-type: none"> <li>* Elders (55+?)</li> <li>* Youth (18–25?)</li> <li>* Adults (25–50?)</li> <li>* New parents (18–35?)</li> <li>* Nutrition educators/dieticians</li> <li>* Family nutrition folks with State of Alaska/Women-Infants-Children program</li> <li>* Community members and other stakeholders</li> <li>* Boys &amp; Girls Club</li> <li>* Culture camp organizers</li> <li>* Alaska Food Policy Council (they host a conference on similar topics to ours)</li> <li>* Ask Alaska Food Policy Council members for invite lists</li> <li>* Look at past Alaska Plants as Food and Medicine conference invitees</li> </ul>
<hr/> <p><b>Will proceedings be disseminated? How?</b></p> <ul style="list-style-type: none"> <li>* Videotaping of individual workshops?</li> <li>* Videotaping of plenary sessions?</li> <li>* Broadcast online?</li> <li>* Website of conference proceedings?</li> </ul> <hr/>

Evaluation data were analyzed using social cognitive theory (SCT) (Bandura 2004). SCT posits three main factors affect the likelihood that an individual will change a health behavior: self-efficacy, goals, and outcome expectancies. It also emphasizes reciprocal determinism—a dynamic relationship between the person, the behavior, and the environment. SCT was selected as a guiding theory for the evaluation due to its widespread use in public health as a model to explain behavior change, and its fit with Indigenous evaluation through its emphasis on community through interpersonal relationships and the environment. Survey items were mapped onto the three SCT domains for analysis: behaviors, cognition, and environment. The CAB reviewed and approved our evaluation plan.

In August 2023, the Traditional Foods Gathering was hosted on the SCF health campus in Anchorage, Alaska. It had 27 workshops hosted by 38 speakers, and 139 people registered (including speakers). Attendees were primarily healthcare providers at SCF and ANTHC, including doctors, nurses, medical assistants, behavioral health providers, health educators, dieticians, social workers, and other community members outside the tribal health system. Workshop topics included protecting Indigenous knowledge, respectful harvesting of traditional plants, the health benefits of traditional foods, food

security and food sovereignty initiatives, spirituality and traditional foods, gardening, hands-on workshops making traditional medicines and tasting traditional foods, and Elder stories of growing up surrounded by traditional foods. Sixteen workshops were video recorded, and videos were posted to the SCF Research website (SCF 2025) in August 2025. Even our catering featured local and traditional foods, including game meats, salmon, berries, traditional plant iced teas, locally grown traditional microgreens, and a chaga-flavored dessert.

Sixty-one participants completed the preconference survey and 37 completed the postconference survey. Change is summarized descriptively at the group level through the use of medians, modes, and percent positives. Through thematic analysis, instrument items were grouped by SCT domains, demonstrating the following increases (Fig. 3): 65% to 92% (27% positive change) for behavioral factors such as skills or self-efficacy; 74% to 94% (20% positive change) for cognitive factors such as knowledge or awareness; and 62% to 77% (15% positive change) for environmental factors such as community or environmental accessibility. The increases across all domains indicate that knowledge, intention, and attitudes around traditional foods and medicine increased substantially among participants.



*Figure 3. Synopsis of social cognitive theory analysis of conference evaluations. Percent positive responses (Agree/Strongly Agree) to Likert-type items, aggregated by SCT constructs, comparing pre- (orange) and post- (blue) conference surveys. Behavioral, cognitive, and environmental domains all increased from before to after the conference.*

All three items measuring self-efficacy (i.e., “confidence in preparing traditional foods,” “confidence in identifying plants for food,” and “skills in identifying plants for medicine”) improved from mid-line averages at baseline to high averages in the postconference survey. Difficulty identifying traditional foods decreased (reflecting more positive responses after the conference), consistent with observed gains in self-efficacy. These changes in self-efficacy items may be related to the hands-on nature of many conference workshops.

While the intent items (e.g., “I intend to use traditional foods” and “I intend to use plants as medicine”) had very high ratings on the pre-survey (both had a median response of “agree”), both also saw improvement in the postconference survey with median and mode responses of “strongly agree.” This change in already-high levels of intent demonstrates the power of the conference in building community through knowledge sharing and skill building. This is further emphasized in the increase in scoring of the statement “Traditional foodways are important to my identity as a member of my culture.” The median score rose from “agree” to “strongly agree,” from pre- to post-survey. The Traditional Foods Gathering also strengthened attitudinal identities towards participants’ culture by one full Likert point. Items reflecting connectedness to traditional foodways and perceived safety in gathering showed smaller increases.

Participants reported higher knowledge of local traditional foods and medicinal plants in Anchorage and the Matanuska-Susitna Borough, as well as higher knowledge of where to locate resources to learn more about both traditional foodways and traditional plants as medicine. This increased knowledge of resources helps to expand the impact of the conference, where learning was not limited to the conference but is able to continue through engagement with new resources that provide additional information on conference topics.

Figure 4 displays pre/post percent positive for each question, grouped by social cognitive theory domain, revealing the largest absolute gains in resource awareness and plant identification skills, with the smallest changes where preconference endorsement was already near ceiling.

Anecdotally, many participants and presenters expressed extreme satisfaction with the event, with several saying it was one of the best conferences they had gone to in many years, and they continue to speak highly of the event even years later. A few specific quotes from conference participants include: “I loved the way that [the speaker] placed everything into context of seasons and family. Also the insights she shared about the trauma of being between foods while also embodying her resilience” (participant 45), and “The interplay between traditional and contemporary presenters brought important concepts together and helps me to see how traditional wisdom can make a difference in real wellness” (participant 58).

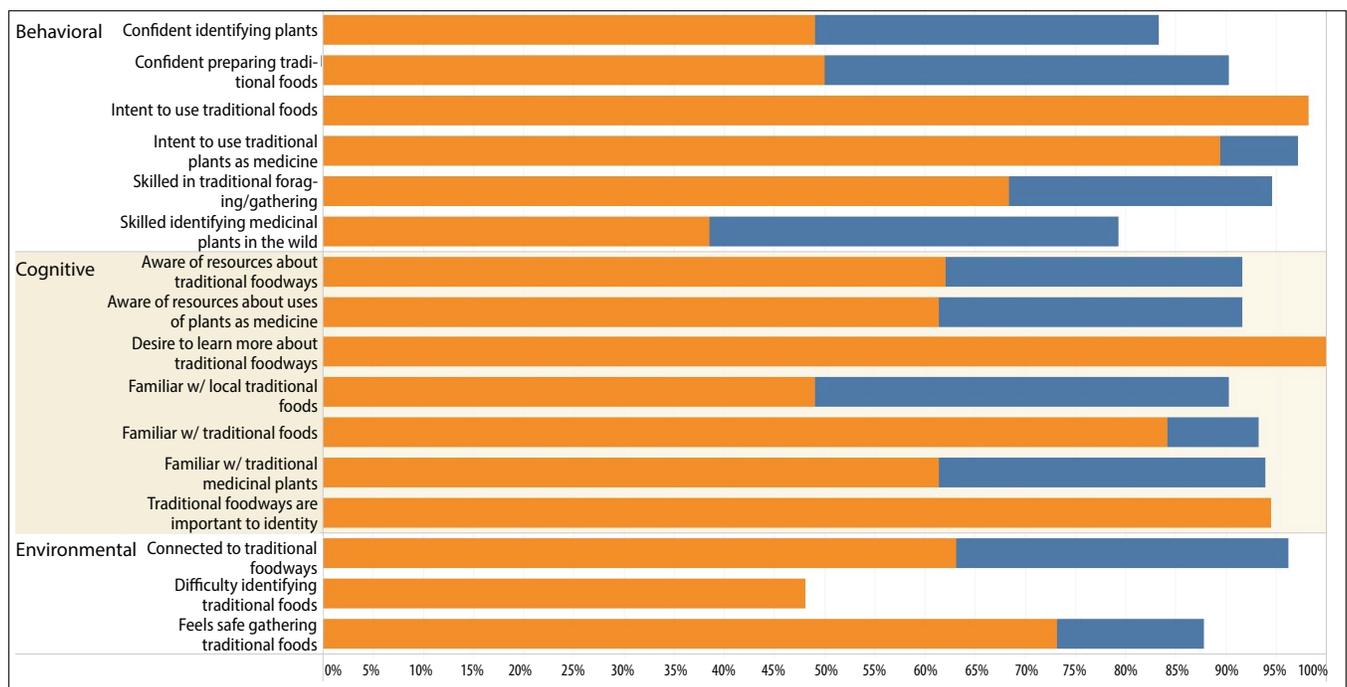


Figure 4. Detail of social cognitive theory analysis of conference evaluations

## DISCUSSION

The SCF CIIHE project was successful because it was grounded in CBPR principles. It built on a longstanding relationship between SCF Research and the wider community. It took the time to review what work was already being done with Indigenous food sovereignty in Southcentral Alaska through a landscape analysis. It assembled local stakeholders into a community advisory board and let the CAB determine what local priorities to address through the grant. The CAB selected hosting a conference as the project intervention, selected workshop topics for the event, nominated speakers, drafted the invite list, and approved the conference evaluation plan, all with the support of study staff. Participants demonstrated significant gains in conference evaluations and spoke highly of the event, even several years after it occurred.

All these project elements align with the CBPR principles outlined by Blacksher et al. (2016:306), namely that they sought to “respect tribal sovereignty, promote transparency, hear community priorities, learn from each other, and take collective action” as well as spend time building trust. Tribal sovereignty was respected by going through the SCF research review process, which reflects SCF’s sovereign right to regulate research involving SCF “customer-owners” (i.e., patients) and staff (Hiratsuka et al. 2017). This manuscript was also reviewed by SCF prior to publication per standard SCF policy, which is done to ensure dissemination materials avoid reputational and community harm like the Barrow Alcohol Study did. Transparency was carried out by sharing the landscape analysis results with the CAB at our initial meeting, which also demonstrated learning from each other. Hearing community priorities was accomplished through CAB meetings and included actions such as empowering the CAB to vote on project intervention topics, nominate workshop speakers, draft the invite list, and approve the evaluation plan. Taking collective action was accomplished through the hosting of the Traditional Foods Gathering itself, where many of our workshop speakers were also members of our CAB. Spending time was accomplished through the landscape analysis conversations in 2022, through the six CAB meetings we had in less than one calendar year, and collectively, the landscape analysis and CAB were accomplished in part due to longstanding relationships—in some case comprising of more than a decade—between SCF Research and the various stakeholder groups.

While CIIHE was not “research” per federal regulations (e.g., it did not include human subjects, it did not perform systematic data collection, and did not contribute to generalizable knowledge), it did accord with the principles of Indigenous research methodologies. We integrated Indigenous ways of knowing into our project logic model (Tapestry Institute n.d.), and the Traditional Foods Gathering featured speakers who addressed mythic ways of knowing (e.g., traditional Elder stories), intellectual ways of knowing (e.g., specific research projects), experiential ways of knowing (e.g., hands-on workshops demonstrating practical skills and tasting traditional foods), and spiritual ways of knowing (e.g., the spiritual dynamics of harvesting and preparing traditional foods) in an integrated holistic approach to knowledge sharing. The Indigenous research model presented in Marsh et al. (2015) incorporates seasonality, intergenerationality, spirituality, and Indigenous languages, all of which were integrated into the Traditional Foods Gathering. Because the CIIHE project was not “research” per se, there were no issues around informed consent such as those discussed in the introduction. But other ethical principles were at play, such as ensuring the intervention benefitted AN/AI peoples.

CIIHE was also an example of decolonizing research. Porsanger (2004:113) summarizes many of the principles of decolonizing research developed by Linda Tuhiwai Smith (1999) as asking the following questions: “Whose research is this? Who owns it? Whose interests does it serve? Who will benefit from it? Who has designed its questions and framed its scope? Who will carry it out? Who will write it up? How will the results be disseminated?” It calls into question the power dynamics in research, with a recommendation to balance power between Indigenous and non-Indigenous people. Power is an essential component when thinking through how to improve research with AN/AI peoples—the Barrow Alcohol Study, the BCG TB study, and the Havasupai diabetes study all started out as research projects addressing real needs in the community, but issues arose in how the research was carried out and disseminated, and how community members were disempowered in the process. In nearly all dimensions, the CIIHE project privileged Indigenous peoples, insofar as it was conceived and owned by a tribal healthcare organization (SCF), the CAB members were largely AN/AI or worked for tribal health organizations, and the project served the interests of and benefited customer-owners (i.e., patients) in the

tribal health system. Finally, in terms of who carried out, wrote up, and disseminated study results, the SCF study staff in CIIHE 1.0 were predominantly AN/AI individuals, and the larger OSU CIIHE initiative is similarly primarily composed of AN/AI individuals.

While CIIHE primarily followed a CBPR framework, another framework for decolonizing research is co-production of knowledge (CPK), which is defined as “the process of bringing together two different knowledge systems in true partnership and equity, to enhance, learn, and create new understandings on a specific topic...[and bring] Indigenous Peoples’ knowledge systems and western science together” (Yua et al. 2022:37). CPK follows many of the same principles as CBPR, including building relationships over time, respecting Indigenous sovereignty, and equitably empowering Indigenous peoples to share control of an iterative research process. However, CPK is primarily focused on blending Indigenous and Western epistemologies and ontologies in the creation of new knowledge. CBPR can be applied more broadly to develop interventions that are not solely focused on new knowledge production. For example, CBPR principles were used in the wider CIIHE 1.0 initiative to develop health interventions centered around distributing seeds and sharing information around traditional Choctaw crops (Thompson et al. 2023), hosting workshops to help Alaska Native Elders learn practical skills related to traditional foodways (Demientieff et al. 2023), and distributing fresh produce to address food insecurity in Osage communities (Hayman et al. 2023). All of these Indigenous food sovereignty projects addressed local priorities, integrated local values and knowledge systems, evaluated impacts, and benefited local peoples. But they were not primarily concerned with generating new knowledge.

In terms of future directions, as mentioned in the introduction, CIIHE 2.0 was funded for an additional five years. SCF is conducting a revised landscape analysis that will investigate Indigenous food sovereignty efforts statewide in a full research project, which will run through 2026. We will share results of this study at future Traditional Foods Gatherings. SCF hosted a second Traditional Foods Gathering in August 2025 and plans to host the Traditional Foods Gathering annually through 2028. Approximately 120 people attended the 2025 gathering, and workshop videos will be uploaded to the SCF Research website (SCF 2025) once editing is complete. We revised our evaluation surveys for the 2025 gathering

to shorten them and provide better linkage between pre- and postconference evaluations, allowing for more robust data analysis. Preliminary analysis of the 2025 gathering evaluations indicates statistically significant increases were seen in familiarity with traditional foods and traditional medicines in the Anchorage/Matanuska-Susitna region ( $p = 0.00$ ), learning traditional gathering and foraging skills ( $p = 0.00$ ), confidence in identifying plants in the wild for food ( $p = 0.01$ ), and confidence in preparing traditional foods ( $p = 0.01$ ). We plan to publish a more substantive analysis of these data in a future article.

## CONCLUSION

CBPR is only one approach to research, but it can be an effective way to conduct high quality, ethical research with Indigenous communities. However, it can be challenging. It takes time and considerable effort. CIIHE was successful in part because the funding mechanism allowed project partners the time and space necessary for extensive community engagement. It allowed the project to be defined by community priorities as the project was ongoing, rather than requiring all elements to be fixed at the time of funding.

There are limitations to the CIIHE initiative. As a research project carried out by a tribal healthcare organization, it had high proportion of AN/AI staff and established connections with the AN/AI community, which are not available to all research institutions. It was also positioned as a QA/QI project, not research per se, which limits generalizability of findings (e.g., from the landscape analysis) and reduced our administrative burden insofar as we were deemed exempt from IRB review by the AAIRB and SCF research review.

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