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An Offering: Lakota Elders Contributions to the Future of Food Security

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Abstract

Food security in American Indian communities is an understudied and often viewed through a deficiency model when the narrative is shaped by non-Indigenous voices, examining the food system and diet through the lens of poverty or through a historic lens narrowly focused on the dwindling traditional food source. To address this gap in scholarship, a qualitative study explored the narratives related to food and food production with 25 Lakota elders living on the Pine Ridge Indian reservation. Findings derived via thematic analysis illustrate the experiences of the elders across their lifespans including their early beginnings on the family homestead, gardening and food preservation throughout their adulthoods. Implications include programing that would transmit the cultural and traditional knowledge of gardening between generations which leads to learning skills, cultural lifeways and community health implications.

INTRODUCTION

Younger generations of American Indians (AIs) living on and off reservations find themselves in the thrall of modernity, evidenced by a loss of self-sustaining food security practices on the reservation and the social ills that come with it (DeMallie, 1978). As younger generations search for a way forward, they must sift through the ashes of their communities' and families' experiences to shed and expose the costs of assimilationist policies. Well beyond the theoretical search for connection, the traditions and newly resurging Indigenous[1] pursuit of food security are rooted in the unbreakable ties of Indigenous people to land tenure and connection to place that sustains all life. Addressing concerns of food security is one of many challenges that can help strengthen communities. One of the ways forward involves honoring the "traditional" knowledge and lived experiences of community elders around sustainable food practices. This

[1] We are defining and using the term Indigenous as the following: Indigenous is the highly developed intellectual thinking, and doing that distinctly ties past and present relationships of land and life to place.

study stems from a larger project focused on Lakota elders and their health and well-being using interviews of Lakota elders living on the Pine Ridge reservation. This research reveals a generational perspective on food security across their lifespans with implications for how elders' insights can contribute to building food security within their communities on the reservation.

We intend to provide generational food security insights from Lakota elders within the context of their lived experiences. The childhood memories of Lakota elders and their current food security practices are carried forward into their adult years. This sample of elders have lived in a time of extraordinary change, as they are the second-third generation to live during the reservation era, which makes their experience uniquely placed to potentially contrast in some very interesting ways with past cultural practices. Surprisingly, given how often Lakota people are discussed in the media, there is limited scholarship about the pre-and-post reservation era diet of Lakota people. Post-reservation era Lakota diets are increasingly interesting to scholars in the context of abject poverty and access to healthy food choices (Bauer et al., 2012). Contemporary[2] research interests in the academy focuses primarily on the Lakota diet from a non-Lakota oriented deficiency model, looking at diet through the lens of poverty or a historic lens narrowly focused on dwindling food sources. Rather, the literature suggests that when contemporary research is led by Indigenous communities or Indigenous frameworks there seems to be an orientation or protocol to recognize or be aware of the issues, but more adamantly hone in on the strengths. The food security time gap between the transitional period, pre-post reservation era (roughly 1860-1950), is where we position this study in the literature. In order to capture that food security history and understand its application in a contemporary context, there is no better resource than the elders living today. Their desire to share this information is a representation of their integrity and an ongoing commitment to contribute to future generations, a standard set by the elders, and passed onto the authors. Therefore, the core of this article is situated first from a strengths based approach, or who is doing food security well in Pine Ridge today, and secondly from a commitment to community wellness, or how can we access that knowledge to promote healthier communities.

The purpose of this study is to focus on the knowledge and experiences of Lakota elders in regard to food security on the Pine Ridge reservation, in order to: 1) counter the story of

[2] The term contemporary is being used as the timeframe we use as a way to measure the current historical context elders occupy in this community.

poverty on Pine Ridge in a Lakota voice, 2) provide/redress generational opportunities for food security, and 3) create a new thread in the growing literature on food security.

FOOD SECURITY

Establishing food security is an international endeavor focused on the availability of, access to, and utilization of local food systems, further "people are considered food secure when they have availability and adequate access at all times to sufficient, safe, nutritious food to maintain a healthy and active life" (World Food Programme, 2016). The global effort to feed the world's people is an extraordinarily complicated issue, tied to the politics of global economies and ultimately monetary gains (Godfray et al., 2010). On a global scale, food security is linked to third world populations, and those who have limited access to capital in terms of healthy soil to grow or engage natural resources in their backyards (Godfray et al., 2010). Although the global focus of food security is centered on addressing and understanding the issues of food security in third world countries, there are AI and other communities here in the United States that live in similar third world conditions (Dennis & Brewer, 2016).

In the U.S., there seems to be more focus on global issues then domestic, for example looking at the world's food security problems rather than focusing on creating awareness around the food security issues at home (Holt-Giménez & Wang, 2011). Food security is an issue that is starting to gain attention in the U.S., but has not gained the kind of attention needed to fully understand its economic, social, and environmental implications. For the most part, food security, even on a community scale is couched in the useful rhetoric of race and class in most inner cities or rural environments (Holt-Giménez & Wang, 2011; Cadieux & Rachel, 2015). In AI communities, food insecurity is an understudied, over looked, often marginalized problem (Gundersen, 2008), which for some communities has been a part of the social dynamic since the reservation era began. Moreover, in comparison to mainstream U.S. communities, AI communities experience higher food insecurity levels than non-AIs (Gunderson, 2008).

Considering an Indigenous perspective from the diverse groups of Indigenous people living in the U.S., such as AI, Alaska Native and Native Hawaiian as an important part of shaping this limited but growing body of literature. Seminal works by Indigenous authors (e.g. Jernigan, Bauer, and Gordon) and local as well as international organizations like Thunder Valley CDC in Pine Ridge, South Dakota and the First Nations Development Institute are

helping to fill the gaps in the literature and assisting Indigenous communities with research that addresses their food security concerns. What becomes increasingly important about this perspective are the conclusions these authors and organizations are drawing in the spirit of informing researchers as well as other Indigenous communities that research about food security is better defined and controlled by the Indigenous communities. While a seemingly endless amount of work needs to be done in the health fields to address food security in U.S. based Indigenous communities the theoretical and practical framework to accomplish this is starting to resonate in the expansion of applied Indigenous methodologies.

PINE RIDGE RESERVATION

The Pine Ridge Indian Reservation, home of the Oglala Lakota Tribe, is located in the southwestern corner of South Dakota along the Nebraska border. There are roughly 46,000 tribal members (Bureau of Indian Affairs, 2016). The reservation entirely encompasses Oglala Lakota County (formerly Shannon County), has lands in three neighboring counties, and remains the third poorest county in the United States (U.S. Census Bureau, 2010). Unemployment on the reservation reached nearly 89.5%, 53.2% live below the federal poverty line, and 60% of children under the age of 18 live below the poverty line (U.S. Census Bureau, 2012). The median household income is $26,383. The per capita income for Oglala Lakota County is $8,768. The annual income for 26.4%, or the largest portion of households, is less than $15,000 (U.S. Census Bureau, 2012). Nearly 40% of the families attending a school on the Pine Ridge reservation were food insecure (Bauer et al., 2012).

The social issues associated with food choices in Pine Ridge are similar, but more pronounced than the issues associated with food choices and food security in mainstream U.S. populations. For example, food choice issues associated with food insecurity in Pine Ridge range from access, financial capital, parental awareness, to education. Poor economic conditions, access to food, and a deprivation of community driven interest in or knowledge of farming or gardening shape some of the social conditions (Pickering & Jewell, 2008; DeMallie, 1978). Reliance on commodity foods and federally sponsored food programs has not only created a dependence but speaks to the issues highlighted here in this article (Glover, 2010).

RESEARCH DESIGN AND METHODOLOGY

INDIGENOUS METHODOLOGIES

University Institutional Review Board and Tribal Research Review Boards approved this research. Both authors are American Indian and/or Alaska Native, the researchers recognized that in order to conduct a study with Lakota elders the methodology and research design must be respectful of their cultural and social experiences and position. Therefore, this study employed Indigenous Research Methodologies in the form of the Conversational Method to structure the research design and inform the interview process/protocol, which is a "culturally organic means to gather knowledge within research" with Indigenous people (Kovach, 2010, p. 42). This study also used semi-structured interviews as a starting point for the conversation. The theory and methods of conducting research from the standpoint of an Indigenous epistemology (Kovach, 2009) helped to inform and organize the semi-structured interviews. Indigenous Methodologies are:

> a) linked to a particular tribal epistemology (or knowledge) and situated within an Indigenous paradigm; b) relational; c) purposeful; d) involve particular protocol as determined by the epistemology and/or place; e) involve informality and flexibility; f) collaborative and dialogic; and g) reflexive (Kovach, 2010, p. 43).

For the participants, this method was a cultural match for an elder sharing information and wisdom with younger generations. The research questions delved into their life experiences, and the elders could share stories directed toward the questions in a manner that was comfortable and familiar. The Conversational Method offered the Lakota elders greater control over what they wished to share with respect to the research questions, and helped to capture the unique lifetime narratives (Kovach, 2009).

PARTICIPANT CHARACTERISTICS, RECRUITMENT, DATA COLLECTION AND ANALYSIS

Twenty-five Lakota elders living on the Pine Ridge Indian Reservation in South Dakota participated in semi-structured, open ended, exploratory, in-depth, and face-to-face interviews. Conversations were recorded and lasted between one and a half to nine hours in length. Twenty of the elders were women (all widowed or divorced), and five were men (three married, two single). They ranged in age from 55 to 98 years, with three under the age of 70. All but five spoke Lakota as their first language and often communicated with each other in Lakota on a regular basis.

Establishing relationships assisted with the production of a core group of Lakota elders whom once they had vetted the research using their own intuitive criteria would refer their friends, family, and acquaintances (Weiss, 1994). There are nine districts on the reservation, each with a senior center and the elder congregate meal site served as the central location to communicate with elders; often the elders would interview the researcher before agreeing to participate in the interview process.

The interviews were digitally recorded, transcribed verbatim, and then manually reviewed for reporting patterns, or themes (Braun & Clarke, 2006). Thematic analysis was utilized to identify the themes related to Lakota elders' food security experiences. Thematic analysis involves six phases: 1) *Familiarizing Yourself with the Data*; 2) *Generating Initial Codes*; 3) Searching *for Themes*; 4) Reviewing *Themes;* 5) Defining *and naming themes; 6) Producing the Report.* Reading the narratives of the elders, patterns were identified by each researcher across the data set through open coding, including where they grew up, family life, and food security. The codes were then analyzed to form themes. For each theme, the authors discussed in great detail the "story" that each theme told and how this fit into the overall "story" the elders shared.

To enhance rigor of this study, we employed strategies recommended by Lincoln and Guba (1985). For credibility, the second author recruited and interviewed all of the elders and established prolonged engagement in the community. She lived on the reservation for four months while conducting the research, spent time with the elders at the senior centers and community events, learning about the communities and its people. To ensure that others would be able to determine the accuracy of the conclusions drawn from the findings, we wrote a thick description of the elders' experiences and interpreted their experiences within their specific social, cultural and historical context. For dependability and credibility, both authors were involved in all phases of data analysis and created an audit trail documenting all aspects of the research project. We discussed any discrepancies and explored on another's perspectives and assured that our study findings were supported by the elders' stories.

FINDINGS

In exploring the elders' experiences related to food security across their lifespans, we identified four themes that described the elders' upbringing into their adult years as it relates to

growing healthy foods in gardens, on their own lands: 1) Family Homesteads addresses the bigger, more descriptive picture of life for the participants as children and adolescents on a very European-style but also very Lakota homestead, 2) Food as Security, reveals produce harvested from the garden and homestead as an opportunity to not only feed their family, past and present, but a means to provide financial income as well, 3) Food Preservation, and 4) Generational Gardening, speaks to the manner in which Lakota elders sustained and are making every effort to sustain their families. Each theme is described in detail below, the illustrative elder quotations have been edited to remove utterances such as "um" or "you know" for readability and clarity with omissions noted as ellipsis points. In some instances, conversations are presented with both the elders (E) and the interviewer (I).

FAMILY HOMESTEADS

In general, the elders grew up similarly, regardless of where they were located on the reservation. They lived in 2 or 3 room log cabins, with neighbors in sight but often located remotely, "out in the country." The log cabins typically had one big bedroom, kitchen and living room, without indoor plumbing or electricity. There were various formations for sleeping which included children huddling together in beds for warmth, putting a mattress in the kitchen near the wooden stove used for preparing meals, and in the heat of the summer time they would set up tents in the yard for sleeping in the more comfortable cool nights.

When the elders were children, their mothers performed an array of services for the family including sewing clothes and blankets, washing clothes at the creek and indoors in the wintertime. Many of the female elders have fond memories of learning to sew and sewing alongside their mothers, aunties, and grandmothers. The oldest elders shared that their grandmothers also made moccasins for the children to wear in the winter.

The homes were without indoor plumbing so they hauled water from a nearby dam, or creek, which was described as:

> The water was real clean and the weeds weren't in there and the water was really nice and it was deep and you could see down to the bottom and in the winter time then the water would freeze they used to go to the school and ice skate. (E01)

The water was stored in a big wooden barrel behind the house and they had a wagon especially for the barrel, their father or older sibling would pull it to the creek with their horses, fill it up,

return it to the cabin, and cover it with canvas. Otherwise, they would make several trips between the creek and their cabins with buckets transporting water.

The creek was an important location and resource that provided fresh water, wood, and recreation. The families would work together and go down by the creek to collect firewood. While doing so, they would picnic and prepare meals as it was an all-day event.

> When my dad go down at the creek, she [her mother] takes the coffee pot and coffee and sugar and then she was going to take potatoes and eggs and gonna boil eggs and potatoes together for dinner. We chopped wood and chopped wood and piles a wagon was going to haul it out for us to the house…we were doing ok. (E11)

As the elders have shared, they and their families were always busy working for their families but also for the community not only with food but with material goods. One elder shared that the mothers and grandmothers shared their skills with others,

> She was head of a sewing [group] and she made mattresses and she made curtains for people. They'd get all kinds of crocheting for people like that. With that extra she cut from the mattresses [she made things for others]…(E04)

On these homesteads, the families created and maintained a collective effort to support themselves. As evidenced by the importance of the creek and all it provided, the elders also shared details about how their families grew, harvested and prepared their foods both on the homestead and from nearby areas.

FOOD AS SECURITY

In general, while the elders describe their childhood as not having a great deal of money, they did have their basic needs met. One elderly woman states simply,

> …that's how we could live with no running water and a garden that was just right there. We ate whatever we wanted – watermelon, whatever we wanted - and towards fall [her father] sells his stuff - his corn and he sits there and sells his garden [produce]. …No one does that anymore. (E09)

The garden served as a source of security in relation to food and possible income for selling the surplus produce to others. This pattern of self-reliance and food production was a resource for the elders as they began to have their own families.

> I: How do you raise 10 kids?
> R: Well [my husband] was, uh more of [a farmer], we had a big farm up home, so my children, you know, that's how my farm life, cows, chickens, we never did any hogs though, that's one thing we never did have, we had cows and horses but we never had

> hogs, I don't know why. Chickens, you know vegetables…good garden – big garden, yeah. Mmm hmmm, we had big gardens and then come fall we'd contract schools to for potatoes and so forth. He starts out with a contract and then he saves all that so many bushels of potatoes to schools, different schools, so that's how we raised our children. (E19)

Similarly, an elder man shared in regard to his ambitions as a young man and what he wanted to accomplish for himself and his family:

> …soon after I came back from the service I got a few head of cattle. *I wanted to be independent*. I wanted to be somebody so I got a few head of cattle and I began to raise them. I worked hard day and night. Winter, summer I worked my hand to the bone. (E02)

In an effort to maintain his self-sufficiency and building a life on his reservation lands he brokered this deal with his family member when he needed more funds to keep his dream alive:

> There was, so in 1952, 1952 just before that Korean war broke out. So I went to work at the Provo, there was ammunition depot set up there. There were no jobs here. So what few head of cattle I and my brother-in-law and I had said you stay home take care of the cattle. All I make up there, I'll bring back. You pay off the bills and give - I get side jobs over there - we'll throw money in the same pool and we'll stay afloat. So that's the agreement we made. So I went and worked over there until '52 then I, then I came back.

For another elder woman a garden was a tangible resource for her family when her marriage ended. She shared:

> E: At that time there was no…no food stamp or no nothing like that. So I had to - like I told you - I did ironing for the neighbors or I helped them in the garden to get money to feed my kids and my mom and dad never fed them. I did my own…I lived in a tent. Not with my mom and dad. Huh uh.
> I: Who's yard did you pitch your tent?
> E: I put it outside there by the - it's on field. What do you call it? Just like this, so I lived far away from everyone.
> I: With your seven kids?
> E: I took care of them it didn't bother them. My mom would come over and tell me and say here's some food you can eat and feed them
> I: Did you garden?
> E: Yeah I made my own garden and my mom helped. (E16)

Working in a garden and planting her own helped her support her children when her family life changed. She moved into a home before the winter arrived.

FOOD PRESERVATION

The women canned every part of the harvest in order to help the family survive the harsh winters. Also they dried meat, known as *bapa,* and other animal parts for use later in the winter. When an animal was slaughtered, or acquired they continued to use all of it that they could.

> My mom lived close to the slaughter house and my mom would always get the guts and cook the whole thing and then dry them during the fall. And dry them about 4 or 5 cow guts and then they bring them back. We'd eat them during winter time, put them in the cellar [laughs]. Cook already, dry already. Even the lungs! You make *bapa*, you know? Dried meat. Like the lungs and make it like dried meat and dry those and in the wintertime mom would make those and we'd eat it [in] the wintertime. (E07)

Another elder related that the lungs would be dried on the clothes line and then the gaps in the lungs would be filled with meat. This would be roasted when it was time to eat and sliced like meatloaf. She said it was, "Mmm good." (E04)

As the elder above mentioned, putting dried meat in a cellar was a key element in storing food for the winter. Their fathers participated in food preservation by digging cellars and adding shelves, or straw bales for storage. The cellars could also use straw to help insulate and the doorways were covered in canvas to protect from the elements.

In addition to individual family gardens, cellars, and efforts to provide for their families, a group of families in the Oglala community shared the work of food production and preservation:

> … We have a garden and we have some cellars (speaking in past tense). We dig up some cellars. Some people come and help themselves. We have a big community garden, right along the river. So has a machine that pumps water and the community and help to put it away and every year they come and every week they pick up whatever they want – if they need potatoes, then they take some and they don't get greedy they just take enough to last two or three days and then they come back. That's how they all grew up together. So the cellars are still there. (E09)

If one family was in need, another family would share whatever they could in order to help. This was a community initiative, as each member of the community was invested in the success of others.

GENERATIONAL GARDENING

Continuing into their elderly years, the participants' interests lie in sustaining healthy, fresh foods for themselves and their families. Some elders are able to garden on their own or

with the help of their children and grandchildren. One elder who had not yet planted her garden when the interview took place shared,

> I: Do you grow your own garden?
> E: Yeah, I'm going to start one.
> I: The season is late this year. What do you usually grow?
> E: Uh…beets, turnips, radishes, lettuce, onions and I brought the tomatoes and I use that in there.
> I: That'll be good huh? That'll get you a lot of good food.
> E: umm hmmm. (E07)

After this conversation, she asked if she could have a ride to a neighbor's home down the road. The two had an ongoing and what seemed like an annual commitment to each other to trade seeds they had saved from their gardens. Although the season started a little late and there were challenges with the weather and insects, elders were determined to plant. One elder offered,

> …we planted a garden and it rained so much, I don't know, my poor garden. Some of the seeds came up and like somebodies teeth missing - the corn - some of it came up but those cutworms got them. We need like I said I wonder if we put ashes around there if it would kill those grasshoppers and cutworms. I don't know. But there's grasshoppers here and they eat everything up. At the end of the garden you have to have everything I think they have to spray at the end of the years because it starts raining and the moisture starts and that's when it seems all those little grasshoppers come out so I do have a garden and its not very good and its not very big because those cutworms got it. But we have some. (E10)

Another elder struggled to maintain a successful garden this particular summer, due to harsh weather conditions (heat, late frost, and above average rainfall) and insects. This elder was reliant on the garden to sustain herself and her grandchildren. Elders would not only harvest the produce from their gardens but they would also can the produce and dry it for the winter months ahead. This elder shared,

> E: …I tried to have [a big garden] this time and this time only the corn is coming up. The grasshoppers ate all the radishes, cucumbers, they are bad.
> I: We had a late season.
> E: Then we had that frost in the morning in late June and we had a frost!
> I: It was almost in the middle of June. My friend [Name] covered her garden with blankets.
> R: …I really like cucumbers, that's why I planted like 4 rows. And I didn't get one. I have some corn but I don't think its going to get very tall. (E22)

Another elder has health issues which prevent her from enjoying gardening like she used to, but her multigenerational home pitches in to help with raising the garden.

> …on the other side of the house we plant, my son, he digs that up for me every year, rakes it out and everything. I think he does it to keep me busy. He wants me active, he don't want me to sit down… I told him [Name], I don't think I can do it this year because my ankles and knees and back, I said, I have arthritis in my back and when I bend over just a little while it really gets to me. I said, "I don't think I can." He said, "Well I'm going to carry on." (chuckles). We grow a lot of..uh, …my granddaughter she helps and we get, grow zucchini and foods like that pumpkin and squash and beets and onions and tomatoes and we had good tomatoes. We usually grow good tomatoes and radishes. They don't like turnips so I don't grow turnips. We didn't have a good garden last year at all. It just did what it did this last fall, I mean this spring. I had lilac bushes coming up real pretty, these are current bushes… (E01)

For those without a space to plant a garden, one elder shared that a member in the community was offering to put in a garden in her yard. She shared,

> ...Me, I like to work all the time. Like right now, um, at the newsstand over there. Lady said, "we put in garden whoever wants a garden can help them" but nobody looks like [they are] interested. …[She said] "we might need help because like wild weeds coming up and we need pulled out. Are you interested?" I said, "yeah, uh huh, I'll bring my gloves and I'll bring my crackers and peanut butter." I like that. Keep me alive. But um, I have to go over there and check them out how they're doing. (E11)

Elders continued to reiterate that sharing was a common practice, and the success of a community depended on the willingness to share.

In total, while these findings are a small part of the larger story of the Lakota of Pine Ridge, the participants shared experiences that actively fill a knowledge gap in the history of food security on this reservation. This is a story of survival across the elders' lifespans. The elders shared a story that moves our attention away from the images of poverty and plight, and in the direction of how Lakota families continuously strived toward sustaining and securing their access to food as their societies shifted away from the traditional Lakota lifestyle. Families were self-sufficient and relied on a communal effort, which is essential to a pre-reservation Lakota lifestyle (Marshall 2002), in order to maintain health. The transition from hunting to homesteading took place in one generation, yet the ability to adapt and be successful is a testament to the Lakota way of life that had been practiced over millennia, and these elders know very well.

DISCUSSION

In this study, we examined how Lakota elders living on the Pine Ridge reservation navigated their food systems across their life spans. The elders offered insights into their

childhoods and how community members worked together to raise and gather nutritious, healthy foods on their lands and around the reservations. The elders carried these skills and abilities into their adulthood where they strove to sustain their own children by raising their own food in gardens and with cattle. Finally, in their older adulthood the elders yearn for healthy food raised in their backyards. They remain resourceful and willing to communally work toward having fresh vegetables, they share their seeds and their harvest with one another. In the context of food security and subsistence we look to other scholars, both Indigenous and working with Indigenous people, in these fields as a way to further understand the findings.

For Lakota elders not only serve as traditional culture and knowledge bearers, but as evidence has shown here they serve as bearers of many useful life skills. Gardening for the purposes of providing healthy food choices and financial opportunity for their families demonstrates that each elder has the skills to share valuable food security knowledge with younger generations.

IN THE CONTEXT OF FOOD SECURITY

Common approaches to food security for most governments the world over are: the fight against hunger; poverty stricken populations being displaced and not allowed access to food and food systems; and potential climate related changes that will further these gaps (Schmidhuber & Tubiello, 2007). On a more national scale in the U.S., the conversation of food security has focused primarily on non-Indigenous rural and inner city populations that have inconsistent or nonexistent access to nutritious foods and education about food choices (Coleman-Jensen et al., 2014; Bickel et al., 2000). Both the international and national literature speak directly the issues associated with poverty and the social issues within economically impoverished societies (Godfray et al., 2010). For tribal nations in the U.S. efforts to reclaim their food systems (LaDuke 2005; Whyte et al., 2015) are well under way and are couched in the food sovereignty movement by organizations such as First Nations Development Institute (http://www.firstnations.org/). This study associates the current food security issues in Pine Ridge with the international and national literature, we also expand this conversation of food security in Pine Ridge beyond the common variables often linked to food security. The literature about food security in Pine Ridge associates the issues of food security with both sets of

international and national variables, as listed above (Bauer et al., 2012; Henry et al.,2000; Council of Canadian Academies, 2014; Jewell, 2008; White, 2006; Ruffin, 2011).

The results of this study shows a connection between elders' life skills garnered during the assimilationist era and how they reshaped those skills to fit their lifestyle (Cornell, 1990). Although the intention of this research was not to explore the food security issues in Pine Ridge, this emerged as an ever-present concern and theme of the elders when considering their legacy and the future for their grandchildren. This is a perspective that is often misplaced and at times lost when the theoretical framework of food security is narrowly focused on poverty, or deficiency, well away from the strengths of the Indigenous community.

Being on the land helped elders stay connected to their Lakota culture. While elders were not always harvesting food from the homestead, they would often harvest seasonal wild foods in locations that they and their family members had been harvesting for millennia. An important point to make here is these trips often provided an opportunity for elders to spend time with extended family members, communicate in the Lakota language, including learning the location and Lakota names for wild foods. This particular practice helped them maintain a place-based and spiritual connection to their food (Mohawk, 2010; Marshall, 2002).

GARDENING FOR SURVIVAL, IN THE LAKOTA IMAGE

The reality is that gardening has been a part of the landscape in Pine Ridge, a practice that began soon after the establishment of the reservation. This study demonstrates that elders, ranging in ages from 50-90 years, were born in an era of vast societal change (DeMallie, 1987), which provides for them a very unique life experience, unlike any Lakota generation before them. Elders made it clear that gardening was a survival tool, a mechanism to maintain autonomy, family, and a close connection to their Lakota values. As is the case with numerous generations of American Indians throughout the U.S., Lakota families adapted their way of life not only as a survival technique but as a way to keep what federal policy aimed to destroy (LaDuke 2005; Calloway, 2015).

Gardening in that sense was a way to shape what was known to Lakota people before the reservation era began. Elders shared their experiences of preserving the harvest by curing meat or drying produce to put away for the coming winter months. The practice of putting food away, and drying or securing food for the winter is an old practice that was adapted for the

homesteading lifestyle (Powers & Powers, 1990). What changed was the diet and harvestable goods available. Although buffalo and other wild foods (as stated above) were/are still harvested occasionally, gardening added another dynamic to food security. Where the elders' message coalesces with the larger body of literature about food security is within this context of survival. While the removal of tribes to reservations, and limiting access to traditional foods was a major blow to tribal life, the ability to adapt, and adapt in a way that did not fully compromise who they were as a people speaks to an inherent resilience (Fleming & Legogar, 2008) that elders spoke of with reverence.

As Marshall (2002) writes, a more spiritual approach to food security is part of the very core of being a Lakota. The Lakota virtues, the ideological foundation of Lakota life ways, *Praying, Respect, Caring and Compassion, Honesty and Truth, Generosity and Caring, Humility, and Wisdom,* were a part of participants' everyday actions and responsibility to provide for their families. For example, elders would often express their frustrations about younger generations' unwillingness to work hard for their food, the kind of work that homesteading or gardening demands. Their frustrations were not a part of an emotional rant unattached from any of the above virtues. Their concern was realistic in their minds, that gardening and activities associated with producing your own food would help reestablish younger generations' control of their own food security. Furthermore, if younger generations take ownership of their food security by producing their own food and building self-sustaining food systems in their communities, that might also help them maintain, grow, and reconnect to who they are as present day Lakota.

SHARING KNOWLEDGE IS COMMUNITY HEALTH

In consideration of the above discussion, this section highlights elders' willingness to share for the benefit of their community. Gleaned from the interviews with elders and supported by research in the field of Indigenous Knowledge transmission, acquisition, and practice, the elders desire to share is both a cultural norm and an interesting dichotomy between what is known about knowledge transmission and what knowledge is accessible (Ohmagari & Berkes, 1997; Wane, 2000; Cajete, 1994; Smith, 2000; Barnhardt, 2005; Turnbull, 2000). Quite clearly the transmission, acquisition, and practice of traditional ecological knowledge (TEK) (Berkes, 1999) can be witnessed in the continued practice of harvesting and producing/storing foods

among the elders. While these knowledge practices have evolved for obvious reasons, some forced and some natural, one thing is certain older more traditional knowledge has been exchanged or enhanced in a way for new knowledge to take hold. For example, elders still harvest wild choke cherries for a traditional dessert called *wojapi*. The methods used in harvesting those cherries represents a blend of traditional and new knowledges: the location and use of the berries having been passed down for generations, and the collection of the harvest being done with modern techniques. The ability to use modern tools doesn't replace the traditional knowledge but enhances it. Replacing parts of the process with modern technologies may seem to supplant older knowledge, but elders were adamant that they maintained connections to their language and culture while harvesting. In this way neither knowledge system is stagnant, both knowledge systems are useful and the traditional knowledge about the significance of choke cherries is carried on, as an example. As Battiste and Youngblood (2000) write, the ongoing connection to and creation of Indigenous knowledge is paramount to the survival of Indigenous people "these teachings gave form to an ecologically based vision of humanity" (p. 3).

The ability to share knowledge is a privilege elders in this study value. They often share knowledge of gardening techniques and trade seeds amongst themselves. Seed banks are a common and well known practice throughout the world (Turnbull, 2000). Sharing seeds within very rural communities is a practice that has been going on for millennia (Kimmer, 2013; Mohawk, 2010). Anecdotally, It's important to mention that when doing the research elders were observed trading a variety of seeds with the intention of encouraging the continuation of gardening among elders as well as intentionally diversifying the proliferation of garden varieties. They save seeds from their gardens and share seeds with others in nearby communities, acting as their own seed banks (Cajete, 1999). The elders have a tremendous amount of knowledge of how to successfully grow vegetables in their climate and soil conditions. Fostering and facilitating this knowledge more broadly could help this community share seeds across community districts, which have distances of 100 miles or more.

Within the intellectual landscape of sharing knowledge is the transmission of new knowledge opportunities from young to old and visa-versa. This kind of sharing extends to the material: elders share readily with others, and those that benefit from the elders' sharing are modest in what they take so others can have some food as well. For example, it was observed

that elderly gardeners often shared surplus from their gardens, and those who benefit from the elder's labor only taking a few turnips from large boxes full of turnips. With their abundant gardens they fed their families and neighbors in addition to themselves.

The opportunities to share or transmit gardening knowledge is real and resonates for example in a number of summer youth programs on the reservation. Youth work on projects around the reservation throughout the summer annually – they could enact their own values and serve the elders by helping them with their gardens which could help them learn these important skills and in turn the elders can grow their own food, as they have for most of their lives. We conclude this section by acknowledging that elders' contributions to their families and communities is a humility that is inextricably woven into the very fabric of their being. The skills and knowledge of food security they possess are not only a recognition of their commitment to change for the purposes of supporting their families, but also of their commitment to support the food future of the Pine Ridge Indian Reservation.

CONCLUSION

This research explored the contributions Lakota elders have to make to the current food security concerns for the communities of Pine Ridge, South Dakota. Overall the generational knowledge elders in today's society possess is from a lifetime of trial and error. There are lessons as well as practices to be learned from those experiences. Well beyond the common conception of what these lessons are is the notion that elders also possess a very practical yet cultural knowledge of food security. They have, for their own part, demonstrated an ability to reshape the tools of assimilation in their image in order to stay connected to the values and spiritual beliefs that sustained their ancestors. The recognition that elders have a great deal to contribute to our modern day societies is a well-known fact, and in part a practice Lakota people have honored for millennia. As modernity continues to force change in Indian communities, one way to offset the potential loss of knowledge is to create community-based structures that incorporate elder's voices and demonstrated food security practices.

Our intentions with this article are not to paint a picture that claims there is a separation between elders and community, there are organizations in Pine Ridge who promote this very well. Our intentions are to first recognize food security as an issue in Pine Ridge, second to suggest the time has presented itself to think differently about food security for tribal nations,

third to encourage looking for food security answers within an unconventional population. Although efforts to address the issues are under way, perhaps the community can start to develop opportunities to learn and unpack elders' experiences.

In closing, elders agree the need to talk about the way forward for food security is a matter of community health. Elders have a yearning to transmit knowledge, but want people to value what they are trying to offer and create a forum or opportunities for them to share. Without a community wide support network or modern technologies, they are still trading seeds and gardening in order to provide healthy safe food for their families through a collaboration of traditional and contemporary knowledge.

REFERENCES

Anderson, T. L., & Lueck, D. (1992). Land tenure and agricultural productivity on Indian reservations. *The Journal of Law & Economics*, *35*(2), 427-454.

Barnhardt, R. (2005). Indigenous knowledge systems and Alaska Native ways of knowing. *Anthropology & education quarterly*, *36*(1), 8-23.

Battiste, M., & Youngblood, J. (2000). *Protecting Indigenous knowledge and heritage: A global challenge*. Vancouver: UBC Press.

Bauer, K. W., Widome, R., Himes, J. H., Smyth, M., Rock, B. H., Hannan, P. J., & Story, M. (2012). High food insecurity and its correlates among families living on a rural American Indian reservation. *American journal of public health*, *102*(7), 1346-1352.

Berkes, F. 1999. *Sacred Ecology*. United Kingdom: Taylor & Francis.

Bickel, G., Nord, M., Price, C., Hamilton, W., & Cook, J. (2000). Guide to measuring household food security. *US Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition, and Evaluation.* Retrieved: http://www.fns.usda.gov/sites/default/files/FSGuide.pdf

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101.

Brewer, J. P., & Stock, P. V. (2016). Beyond extension: Strengthening the federally recognized tribal extension program (FRTEP). *Journal of Agriculture, Food Systems, and Community Development*, *6* (3), 91-101.

Bureau of Indian Affairs (2016). Pine Ridge Agency. Retrieved: http://www.bia.gov/WhoWeAre /RegionalOffices/ GreatPlains/WeAre/Agencies/PineRidge/index.htm

Cadieux, K. V., & Slocum, R. (2015). What does it mean to do food justice? *Journal of political ecology*, *22*, 1-26.

Calloway, C. G. (2015). *First peoples: A documentary survey of American Indian history*. Boston: Bedford/St. Martin's Press.

Cajete, G. (1999). *Look to the mountain: An ecology of indigenous education*. Durango, Colorado: Kivaki Press.

Cajete, G. (1999). *A people's ecology: Explorations in sustainable living*. Santa Fe, New Mexico: Clear Light Publishers

Coleman-Jensen, A., Gregory, C., & Singh, A. (2015). Household food security in the United States in 2013. *USDA-ERS Economic Research Report*, September 2015.

Cornell, S. (1990). *The return of the native: American Indian political resurgence*. United Kingdom: Oxford University Press.

Council of Canadian Academies. (2014). Aboriginal Food Security in Northern Canada: An Assessment of the State of Knowledge, Ottawa, ON. The Expert Panel on the State of Knowledge of Food Security in Northern Canada, Council of Canadian Academies

DeMallie, R. J. (1978). Pine ridge economy: cultural and historical perspectives. *American Indian economic development*, 237-312.

Dennis, M. K., & Brewer, J. P. (2016). Rearing Generations: Lakota Grandparents' Commitment to Family and Community. *Journal of Cross-Cultural Gerontology*, 1-19.

Fleming, J., & Ledogar, R. J. (2008). Resilience, an evolving concept: A review of literature relevant to Aboriginal research. *Pimatisiwin*, *6*(2), 7-23.

Glover, V. (2010). *Keeping Heart on Pine Ridge: family ties, warrior culture, commodity foods, rez dogs, and the Sacred*. Summertown, TN: Native Voices Books.

Godfray, H. C. J., Beddington, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J. F. & Toulmin, C. (2010). Food security: the challenge of feeding 9 billion people. S*cience*, *327*(5967), 812-818.

Gundersen, C. (2008). Measuring the extent, depth, and severity of food insecurity: an application to American Indians in the USA. *Journal of Population Economics*, *21*(1), 191-215.

Hakansson, C. G. (1997). Allotment at Pine Ridge Reservation: Its Consequences and Alternative Remedies. *NDL Rev.*, *73*, 231.

Heart, M. Y. H. B., & DeBruyn, L. M. (1998). The American Indian holocaust: Healing historical unresolved grief. *American Indian and Alaska Native Mental Health Research*, *8*(2), 56.

Henry, L. R., Bear-Little Boy, R., & Dodge, B. (2000). A Summary of Findings of Assessment of Food Concerns, Nutrition Knowledge and Food Security of Oglala Lakota College Students on the Pine Ridge Reservation. *Tucson, AZ: Native Peoples Technical Assistance Office*.

Holt-Giménez, E., & Wang, Y. (2011). Reform or transformation? The pivotal role of food justice in the US food movement. *Race/Ethnicity: Multidisciplinary Global Contexts*, *5*(1), 83-102.

Hurt, R. D. (1987). *Indian agriculture in America: Prehistory to the present*. University Press of Kansas

Jewell, B. (2008). *The Food That Senators Don't Eat: Politics And Power In The Pine Ridge Food Economy* (Doctoral dissertation, Colorado State University).

Kimmerer, R. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Canada: Milkweed Editions.

Kovach, M. (2010). Conversation method in Indigenous research. *First Peoples Child & Family Review*, *5*(1), 40-48.

Kovach, M. E. (2009). *Indigenous methodologies: Characteristics, conversations, and contexts*. Toronto: University of Toronto Press.

LaDuke, W. (2005). *Recovering the sacred: The power of naming and claiming*. New York: South End Press

Lesiak, C. (2007). *In the White man's image*. WGBH Boston Video.

Marshall, J. (2002). *The Lakota way: Stories and lessons for living*. New York: Penguin.

Mohawk, J. (2010). *Thinking in Indian: a John Mohawk reader*. J. Barreiro (Ed.). Golden, Colorado: Fulcrum Publisher

Ohmagari, K., & Berkes, F. (1997). Transmission of indigenous knowledge and bush skills among the Western James Bay Cree women of subarctic Canada. *Human Ecology*, *25*(2), 197-222.

Powers, W. K., & Powers, M. N. (1990). *Sacred foods of the Lakota* New Jersey: Lakota Books.

Pickering, K., & Jewell, B. (2008). Nature is Relative: Religious Affiliation, Environmental Attitudes, and Political Constraints on the Pine Ridge Indian Reservation. *Journal for the Study of Religion, Nature & Culture*, *2*(1), 135-158.

Pratt, R. (1892). "Kill the Indian, save the man." In *Official Report of the Nineteenth Annual Conference of Charities and Correction*," pp. 46-59.

Urteago, D. (2009). Mighty Pulverizing Engine-The American Indian Probate Reform Act and the Struggle for Group Rights, A. *Est. Plan. & Cmty. Prop. LJ*, *2*, 463.

Ruffin, J. (2011). A renewed commitment to environmental justice in health disparities research. *American journal of public health*, *101*(S1), S12-S14.

Schmidhuber, J., & Tubiello, F. N. (2007). Global food security under climate change. *Proceedings of the National Academy of Sciences*, *104*(50), 19703-19708.

Smith, L. T. (2000). Kaupapa Maori research. *Reclaiming indigenous voice and vision*, 225-247.

Turnbull, D. (2003). *Masons, tricksters and cartographers: Comparative studies in the sociology of scientific and indigenous knowledge*. United Kingdom: Taylor & Francis.

U.S. Census Bureau (2010). Small Area Income and Poverty Estimates. Retrieved: http://www.census.gov/did/www/saipe/data/highlights/2010.html

U.S. Census Bureau. (2012). American Community Survey, TableB10051C. Retrieved: http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pidACS_12_1YR_B10051C&prodType=table

Wane, N. N. (2000). Indigenous knowledge: Lessons from the elders–A Kenyan case study. *Indigenous knowledges in global contexts: Multiple readings of our world*, 54-69.

Weiss, R. S. (1995). *Learning from strangers: The art and method of qualitative interview studies*. New York: The Free Press.

White, L., Stauss, J. J., & Nelson, C. E. (2006). Healthy families on American Indian reservations: A summary of six years of research by Tribal College faculty, staff, and students. *American Indian Culture and Research Journal*, *30*(4), 99-114.

Whyte, K. P., Brewer, J. P., & Johnson, J. T. (2016). Weaving Indigenous science, protocols and sustainability science. *Sustainability Science*, *11*(1), 25-32.

Winters, L. I., & DeBose, H. L. (2003). *New faces in a changing America: Multiracial identity in the 21st century*. Thousand Oaks, CA: Sage Publications.

Wilson, S. (2008). *Research is Ceremony – Indigenous Research Methods*. Nova Scotia: Fernwood Press.

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