HARVESTED FOOD CUSTOMS AND THEIR INFLUENCES ON VALUABLE FUNCTIONING OF ALASKA NATIVE ELDERS

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ABSTRACT

Valuable functioning, an empowered quality of life evident in Alaska Native communities, is influenced at least in part by a lifestyle dependent on fish, game, and plants harvested by the consumer. Elders play important roles in the transmission of knowledge and skills necessary for continuation of food harvesting customs, and through this process, elders feel valued and obtain quality of life. This paper examines how elders view their roles. Communities based on harvested foods have similar food cultural experiences even though land, location, language and tribal entities are different. The proposed model of food culture illustrates eight key constructs. Traditional Native foods are central and appear to be predicated on continued use, access, and participation in the procurement. The communities' continued inclusion of older adults is viewed as an indication of respect for elders and links villages to experiences of the past and provides a vehicle for the elders' achievement of valuable functioning, a component of quality of life.

KEYWORDS: Alaska Native older adults, elders, health, diet, subsistence, food customs

INTRODUCTION

The role of elders in continuing the harvested food culture found in Alaska Native communities is explored in this paper through an examination of aspects of traditional food beyond nutrient intake. "Aging" is a biocultural phenomenon, not simply a biological process, and thus, it is important to document observed habits to potentially understand the progression of aging within the context of a Native community.

Included in this essay is a reexamination of the testimony gathered at the Voices of Our Elders Conferences

(2004–2006, as described below) for the purpose of presenting a broad overview of food issues that affect Alaska tribes. These conferences heightened our understanding of the similarities between the groups as their comments revealed the importance of harvested foods in their lives. Using quantitative data collected by the authors, we link contributions of harvested food to quality of life and the achievement of a sense of well-being by the elders, or what Sen (1993:31) referred to as achievement of "valuable functioning." The data presented moves towards defining a measure of valuable functioning based on the following attributes: elder personal well-being, sense of purpose, and the achievement of the role of elder status (community-recognized culture-bearer due to an older person's culturally congruent lifestyle, not simply to being elderly).

There is always the possibility that the authors have oversimplified or misunderstood the broad nature of the elders' comments. This paper in no way attempts to minimize the importance of cultural differences and the benefits of the diverse diets of Alaska tribes. It was our goal to use comments of Native elders to increase our understanding of harvested food customs and the relationship to quality of life as older individuals living in Native communities increase in age. Consistently in the Voices of Our Elders Conferences testimony, from both rural and urban locations, the older participants wanted greater access to harvested Native foods and reported that they felt better when they had access to harvested foods. Universally across tribal groups was the sense of purpose (and thus well-being) that came when the elders were involved not only in the act of eating fish, but also in the planning prior to harvest, the actual harvest, as well as in the processing and distribution of the harvest.

The issue of the importance of harvested foods to the lives of elders is not a new issue for Alaska Native communities. Pioneering work in the late 1970s was conducted by Kerry Feldman with a team of interdisciplinary students from the University of Alaska Anchorage, which documented the desire of elders in Anchorage for harvested foods when they moved away from their rural village to urban locations such as Anchorage.[1] From this initial study, fresh Alaska salmon prepared in traditional ways[2] was added to the menus served in the Anchorage congregate meal program to Native senior citizens.

Roughly speaking, there are 15,600 older Native individuals over the age of fifty-five[3] who identify themselves with one of the 229 federally recognized Alaska Native tribes (U.S. Census Bureau 2000). Approximately 10,500 (or one third) of Native older individuals live in Alaska's rural communities and half of all Alaska Natives live in rural areas.

METHODS

DESCRIPTION OF DATA SOURCES

The compilation of data describing food culture forms the foundation of this paper. The primary sources are narrative data from testimony given by over six hundred attendees at the twenty Voices of Our Elders conferences of elders sponsored by the National Resource Center for American Indian, Alaska Native, and Native Hawaiian Elders (NRC) at the University of Alaska Anchorage. Meetings from one to five days were held during 2004–2006 in Anchorage, Angoon, Barrow, Bethel, Buckland, Dillingham, Fairbanks, Juneau, Kodiak, Kotlik, Kotzebue, Metlakatla, Napaskiak, New Stuyahok, Nome, Nuiqsut, Old Harbor, St. Paul Island, Unalaska, and Wainwright. Meetings were structured to allow for casual discussions among older Native individuals selected by their communities to converse on issues deemed important by the attendees.[4]

1. The research project was funded by the National Science Foundation Student Originated Studies Program and received an award for the best project NSF funded that year. Data remain unpublished.
2. Currently, USDA does not allow harvested meats to be served in funded food support programs for the elderly without passing federal meat inspection. Work is ongoing to permit inspection of locally harvested meats by Alaska Native tribes to serve in Native elderly feeding programs (Title VI programs), which would be less expensive, lower in fat, and a higher quality meat than purchased beef or chicken that requires continuous frozen transport that is frequently a problem to remote, isolated Alaska communities.
3. Considerable discussion was presented at the Voices of Our Elders Conferences on who were "elders" and who to include in the "elderly" or older adult classification. Being "elderly" to them was not a chronological phenomenon as often found in western culture (Social Security comes after sixty-five, because of the seventy-three years of life expectancy for Caucasian populations), but was based in part on general trends of declining physical and mental functioning ability. Age fifty-five is commonly used by the U.S. government for determining services for older individuals in the general US population, and age fifty for American Indian, Alaska Natives, and Native Hawaiians.
4. Transcripts are on file at the National Resource Center for American Indian, Alaska Native, and Native Hawaiian Elders at the University of Alaska Anchorage.

Comments gathered at the Voices of Our Elders Conferences are supplemented with data from several studies, observations, and field notes by the authors from their work in Alaska communities. These sources included the quantitative Iñupiaq elders survey collected during 2004–2006 (see Smith et al., this volume), and the WIC Healthy Moms Study (Rody et al. 2002; Smith et al. 2008). Also included are Smith's field notes from her work in Unalaska with the State of Alaska/U.S. Department of Agriculture's Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program, and the University of Alaska Anchorage Institute for Circumpolar Health Studies; Easton's field notes are from her work as one of the first territorial dietitians from 1948–1950 and her involvement in four research projects with Smith during 1996, 2001, 2004, and 2005. LaBelle's notes result from his Iñupiaq upbringing in rural northwestern Alaska, attendance at boarding schools for Native children, and his many years of work as a leader and administrator for Native organizations, Alaska state government, and most recently as a key staff member at the NRC. Wiedman, an anthropologist, observed and participated in the food-related activities that were occurring during the visits to four villages participating in the WIC Healthy Moms Study during the summer of 2001.

Graves and Shavings (2005), in their initial analyses of the Voices of Our Elders Conferences, noted the strong similarities of comments concerning many issues, even though testimony came from twenty different locations representing Native groups from geographically dispersed and unique cultural backgrounds. Graves and Shavings focused on how communities (and community systems) support elders and thus how they show respect to elders.

DEFINITION OF ELDERS

Within Alaska Native communities, the role designator of "elder" usually denotes individuals identified as community leaders and role models, compared to "elderly" that simply indicates aging individuals (Graves and Shavings 2005). All older individuals from Alaska Native communities involved in this project are referred to in this essay as "elders" in order to comply with the style used by this journal, unless "Elder" is part of the name of an organization to which we refer.

The Iñupiaq Elders Study compared Iñupiaq individuals living in urban and rural communities. To ensure sufficient sample sizes to make valid conclusions, the Iñupiaq Elders Study included individuals fifty years and older. This demarcation is consistent with the use of fifty years of age to be eligible for the Title VI food programs for Native individuals living in Alaska.

DEFINITION OF SUBSISTENCE

"Subsistence" is a legal term used to describe the hunting, fishing, and gathering of foods.[5] LaBelle noted that subsistence is essentially a western term to describe the traditional harvest of foods by Native people. Many indigenous groups in Alaska have their own words, or value concepts, to describe the activity of harvesting and sharing foods. In some cases, there are variations of the term within cultural groups. It should be noted that the quantitative data collection was in Iñupiaq villages, and concepts may differ if similar data were collected in other indigenous communities. Wherever possible the authors have used the terms "traditionally harvested food," or "harvested foods" instead of the word "subsistence" or "subsistence foods."

THEORETICAL FRAMEWORK

Within a theoretical framework, the authors examined narrative and quantitative data to increase the understanding of elders' views, which rate the acts of participation in harvested food activities as vital to their personal fulfillment and thus their achievement of quality of life. The authors acknowledge the contribution of Sen (1993:30–53) in the use of the term "value functioning" to provide a theoretical explanation of the achievement of capacity and thus well-being. MacClancy and Macbeth (2004:5–6) characterized food as both "nature" and "culture." They describe food as important both "physically and socially, we consume it and make it part of ourselves."

5. Section 803, Title VIII of the federal law, subsistence is defined as the customary and traditional use in Alaska of fish, wildlife, and other renewable resources for direct personal or family consumption, for the making and selling of handicraft articles from the nonedible byproducts of fish and wildlife taken for direct personal or family consumption, and for customary trade, barter, or sharing for personal or family consumption.

DATA COLLECTION

Methodology for the collection of the narrative data from the NRC Voices of Our Elders Conferences has been previously published by Graves and Shavings (2005) in their examination of other key topics. Elders' testimonies referred to in this examination concerned their desire to consume traditionally harvested foods, even though the respondents may not be currently living that lifestyle.

Quantitative data were collected during the summers of 2004–2006 in Buckland and Deering (both Iñupiaq villages) and among Iñupiaq individuals living in Anchorage. All survey participants were community-dwelling, noninstitutionalized individuals who had a fiftieth birthday by December 2005. The rural sample was 94% of all eligible Native older adults living in the two villages. The urban group sampling was different from the rural group. This group was not randomized and no age stratification or matching to rural sample was attempted. The urban survey group represented the first fifty completed interviews of Iñupiaq individuals located through community groups, as opposed to the rural group, which consisted of all eligible individuals in the villages that were willing to participate.

PROTECTION OF SUBJECT RIGHTS

All research protocols received Institutional Review Board (IRB) reviews by the University of Alaska Anchorage and Florida International University, as well as a courtesy review by the Alaska Region Indian Health Service IRB.

All data were collected consistent with the guidelines presented in Principles for the Conduct of Research in the Arctic by the National Science Foundation (1986), and the Alaska Federation of Natives Guidelines for Research (1993). To that end, the study was designed to accommodate as much community participation by the elders as possible and to foster a productive partnership between the Native elders and the researchers. Tribal elders' councils invited the NRC to hold a Voices of Our Elders Conference, and all community elders were invited to attend. The elders received no compensation for sharing their thoughts and wisdom, although a contribution was made to the local tribal council by the NRC. Tribal councils distributed small stipends to elders who contributed in the quantitative survey.

CONCEPTUAL MODEL

The proposed conceptual model describes the harvested food customs in Alaska Native communities and the benefits of the food customs for Native elders. It was designed to include common aspects of food harvest, food preparation, and consumption that we are proposing as factors that influence the achievement of valuable functioning by Native elders.

The conceptual model illustrates the presence and relationships of eight constructs (Figure 1) that were repeated in various communities in various ways in the narrative data. The presentation of the constructs within circles is a creation of the authors for the purpose of this paper and for understanding the importance of harvested food in the aging process among Alaska elders. Although Kawagley (1995) indicated that the circle within a circle is a traditional theme among many Alaska Native groups, our model uses overlapping circles showing that relationships between constructs are neither linear nor hierarchical but have intertwined interconnections that appear to be of equal importance.

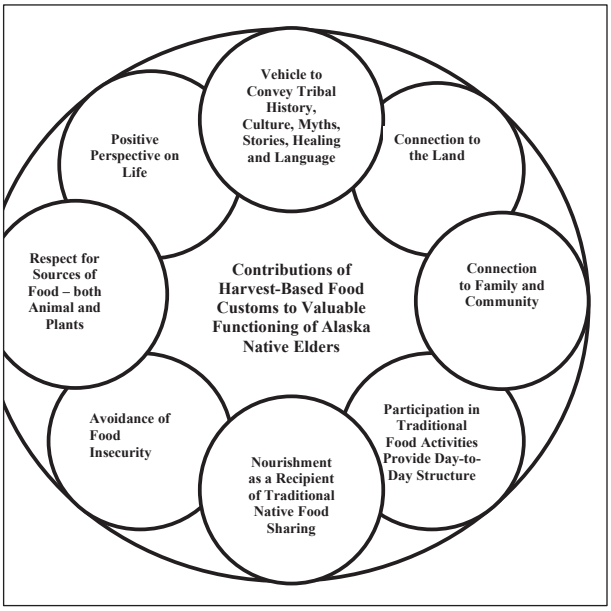

Figure 1. Proposed model of the contributions of harvest-based food customs to valuable functioning of Alaska Native elders

DESCRIPTION OF PROPOSED CONSTRUCTS

The remainder of the paper presents observations and other data that explain each construct with the recognition that food customs are only part of the total culture of population groups.

HARVESTED FOODS ARE A VEHICLE TO CONVEY TRIBAL HISTORY, CULTURE, MYTHS, STORIES, HEALING, AND LANGUAGE

Narrative data indicated that the processes and use of traditionally harvested food is a conduit to transmit and convey culture. Testimonies from the elders indicated that through the discussion of food and the participation in the harvest, preservation, and use of traditionally harvested foods, much of the strength of the culture, myth, stories, healing, and language is retained.

Contemporary elders in Atka, a community in the Aleutian Islands, felt that they were losing their traditions after many of their former elders died during their World War II internment. They recruited a traditional dancer from islands off the coast of Russia who spoke a similar Aleut dialect. She was able to talk with non-English-speaking Atka elders about dances of their childhood. Guided by the arthritic hands of the few remaining elders, the contractor was also able to follow elders' instructions in order to train young women on how to prepare and sew with walrus and seal skins. Harvesting of sea mammals is heavily regulated in the Aleutian Islands, unlike other areas of the state, thus special permission was necessary to allow the villagers to obtain the furs from other Alaska communities to construct the dancers' costumes (Smith field notes, 1992–1994).

In many communities, elders have preserved traditional food history, songs, and dances, often in secrecy to circumvent outside efforts to eliminate them from their culture. After visiting a regional dance festival in northwestern Alaska, we inquired if the village sponsored a youth dance group. An elder told us that dancing had been prohibited by early religious groups, especially a dance where a "man turned into a bird" (Smith field notes, July 2004). It was interesting to note that even though community decisions had been made years ago not to perform the bird dance, individuals in the community still knew the dance, and the elders continued to keep the topic in discussion.

In another village in southwestern Alaska a similar conversation occurred. Elders were essential in reintroducing dancing to the community after many years of discussion. Through the years, elders of the community had privately videotaped their peers performing traditional and family dances before they died so the knowledge would not be lost. These tapes were used to train the current troupe of youth dancers (Smith field notes, December 2003).

Similar to the problems of retaining the dances, the effect of years of western teachings of school teachers, boarding schools, missionaries, and health workers emphasized the foods and eating styles of the Lower Forty-eight western society (Easton field notes, 1948–1950). Today's elders were children during those years and remember the difficulties of retaining their food customs, such as use of traditional greens and rosehips. Native people have adopted the changes in food supplies and circumstances into their customs. For example, U.S. Army surplus supplies given to food programs following World War II included powdered milk and pilot crackers (Easton field notes, 1948–1950), and those products were reported on twenty-four-hour recalls collected during the WIC Healthy Moms Study in 2001. Aleut seal harvesters were paid in cans of corned beef to harvest seals following the United States' purchase of Alaska from Russia in the late nineteenth century. Vestiges of the addition of corned beef as a food staple are still found at community potlucks in the Aleutian Islands in the form of corned beef soup, which locals call "Aleut Soup" (Smith field notes, 1994–1996).

Testimony given at the NRC Voices of Our Elders Conferences support the importance of gathering and sharing food and the contribution of these food-related activities to the fulfillment of life among Native elders. One seventy-four-year-old speaker described how she was raised by her grandmother in a village located on the riverine plains of southwest Alaska. She said:

> We never stayed still. There used to be lots of fish in those days. My grandmother in the fall would make salted fish in the barrels, then the fish eggs, and they would get mousefood[6] in the fall. They started traveling, and [carried with them] mousefood, berries. They used to take fish that was salted with the mousefood, and it was very

6 "Mousefood" is grains gathered by a mouse and buried in shallow tunnels that sprout in the fall or spring rains. The tender green sprouts are often one of the first fresh foods available. Mousefood is eaten much like one would eat a small salad or fresh greens. Tradition dictates that the sprouted grains be replaced with a piece of food to thank the mouse for his work—we were told it was frequently dried salmon.

> good. A lot of rabbits down there where she was at. She watched them, that's why she knows them. They never used to waste foods. So they did things really well. They used to make tundra greens after they had been working, rowing, drying fish, and make braided mats and baskets, and containers, and make string and make kinda a thread out of it, and thread from discarded pants—jeans, and then make little nets. They never stayed still, they always were ice fishing. They never stayed still, being outdoors. Again, not staying idle at all. She didn't know how big she was, when they used to go to Kwethluk, a place of [on] the River. She would see this little old woman at the end of her life, watching her. That's the one that had reached the end of their life, a little small old lady, a person who has reached the end of her life. She was happy. I am happy because I do these things.

Across Alaska, elders are being called upon to revitalize local Native languages as teachers in the village schools. Elders are also encouraging public meetings to be held in traditional languages.

Results from the Iñupiaq Elders Study indicated that most of the elders spoke English. Twenty-four percent of the 101 elders reported that they spoke both English and Iñupiaq, and a small number indicated that Iñupiaq was their primary language. Elders described being punished for speaking in their Native languages at boarding schools. Today, the village schools have Native days where elders share myths and stories with the children, and even teach traditional skills, language, and culture classes.

The qualitative data presented in the previous paper (Smith et al. this volume) provide insight regarding the meaning of "valuable functioning" to Iñupiaq elders. Elders must be able to fulfill perceived roles as leaders and mentors in order to achieve valuable functioning. While communities make distinctions between those who are old and those who are revered elders, qualitative data showed that older individuals in general anticipate respect from family and from younger members of the community. Graves and Shaving (2005) describe the elders' views of respect in greater detail.

Data from the NRC Voices of Our Elders Conferences showed that elders expected themselves to be role models and leaders. Achieving the status of elder could be considered an indicator of also achieving valuable functioning. The elders expressed that they were trained to exemplify traditional cultural values and proper community behavior. With their wisdom, the elders saw their role as individuals capable of and responsible for helping their communities anticipate and find resolution to problems. The processes of securing and processing food provided the opportunities by which cultural values could be observed and thus the community would learn. Elders contended that through transmitting the knowledge they had been given by their own elders, they believed that continuity of the community was assured.

HARVESTED FOODS PROVIDE CONNECTION TO THE LAND

In the keynote speech at the 1980 Alaska Federation of Natives annual meeting, William L. Iġġiaġruk Hensley spoke about the Iñupiaq relationship with and the importance of (traditional) Iñupiaq lands. He said:

> We fought for the land because it represents the spirit of our people, because it represents an intimate knowledge of the environment our people grew up with for ten thousand years. . . . Our fight for land was a fight for [our] survival. . . . We cannot look to corporate or political life to fill the void of a century of psychological repression. . . . A renaissance of our language and culture will give us the basis for the renewal of our people" (Mauneluk Association 1980:1).[7]

In the NRC Voices of Our Elders Conferences, testimony from elders across the state of Alaska reported that when elders are sent to locations away from the village and traditional lands, the elders are without family, and thus are without their traditional foods. Adverse life quality resulted. In the words of the elders:

> When they relocated our elders—three died, they willed themselves to die.
>
> When elders go to the regional senior center, their life shortens because they are not with their people.
>
> When elders are sent out, they miss their food . . . the elders miss having family around.

There are varying opinions as to the value of moving rural elders to urban communities. To many elders, the move is an undesirable separation from their home community and traditional lands, away from family, away from traditional foods, and it removes them from participating in seasonal activities, which is the focus of their life in

7. *Northwest Arctic NUNA* is the local newsletter published by the Maniilaq (formerly Mauneluk) Association in Kotzebue, Alaska. The word *nuna* means "of the land" in the Iñupiaq language.

the village. To the western-oriented medical community, the move of older individuals from rural villages to urban communities offers increased access to medical care. The increased access is often viewed as a positive atmosphere to prolong life. The elders who testified in the NRC Voices of Our Elders Conferences contended that the western belief lacks broad understanding of the importance of the benefits elders perceive from being in their home communities.

Despite their age, elders want to continue to be in the locations of summer camp and in the places of the activities with which they are familiar. "Going to camp" involves returning to the physical places where a family had lived and had hunted for generations. The desire to "go to camp" may return elders to a simpler schedule or perhaps provides time to reflect on life issues important to them. Iñupiaq elders described hunting caribou along the same mountain trails today as when their grandfathers took them hunting sixty or seventy years earlier.

> The caribou comes down that trail and I sit on this side of the trail behind the rocks so they can't see.

Camps as a harvest technique focused considerable person-hours during a short period of time to secure food that would be used over many months or for the year. From a larger perspective, camps also gave younger individuals and children time with grandparents and extended family to hear stories and to learn values by example.

In the WIC Healthy Moms Study (Rody et al. 2002) participants were asked to estimate how much time they spent at "camp" each year. Their responses indicated that time in camp had declined. However, we also noted that with increased technology (faster boats, snowmachines, and four-wheelers that can travel back and forth to camp) they have been able to continue the harvest of wild foods yet maintain residence in stationary villages for cash paying jobs and so that their children can attend schools.

One Iñupiaq man told us that he still remembered the exact location where he first saw his wife-to-be as she picked greens. He had missed a caribou and was tracking it down near her village. He told us that the caribou had "found" his wife (Smith field notes, 2005).

HARVESTED FOODS PROVIDE CONNECTION TO FAMILY AND COMMUNITY

Elders emphasize the importance of family and community support by their active encouragement to maintain strong family ties and value for the extended family. Notes from the 1978 Puiguithaat ("Wise Council") Elders Conference sponsored by the North Slope Borough defined the importance of participation in the community to maintaining good mental health. Elders reported that they wanted "to be close to family," and to have "community support."

Continued immersion in family relationships and community roles is vital to the well-being of rural elders. Optimally, over their lifetimes elders build complex social webs that continue to engage them in family and community decisions (Magdanz et al. 2003; Smith and Wiedman 2000). Not only does the status of "elder" bring responsibilities, but also the traditional kinship patterns and food production lifestyles in each village delegate specific roles for them to fulfill. From a broad perspective, these roles are particularly powerful positions in everyday activities when access to resources is concerned. The authors are proposing but have not specifically tested the impact of an urban location on the elders' well-being. Roles pertaining to food procurement, processing, storage and distribution place them in influential and authoritative positions as compared to elders in the urban setting where traditional activities are much more limited. Equally, as social and economic conditions change in many rural villages, it is unknown how these systems will adapt and how elders will fare.

Conversations with elders at the NRC Voices of Our Elders Conferences provided their perspective that community support is provided to Native elders out of respect, seemingly independent of the physical abilities of the elders. The difference between providing services "out of respect" and "out of need" may be subtle, and the differentiation hard to describe. One of the primary examples of community support is gifts of raw and prepared food. Other community support included walking to the store to purchase groceries or to pick up mail, giving elders rides to community events, washing dishes, sweeping snow from walkways, and delivering water or firewood to the elders' homes. Similar comments were obtained from both rural and urban participants.

The elders in a Tlingit fishing community in southeast Alaska stated that government-regulated wild food harvest quotas should allow for celebrations in order to honor deceased loved ones, as well as provide sufficient quantities for visiting children and grandchildren. Often these grandchildren and great-grandchildren will spend summers with grandparents, depleting the traditional foods when they want to take some of their heritage back to their

homes in bigger "urban" communities such as Juneau, Fairbanks or Anchorage. One elder told the survey team, "Two halibuts do not feed many grandchildren" (Smith field notes, 2001). Because these issues are complex, comments from the elders contained deep emotional feelings.

Access to harvested wild foods may vary between locations based on normal cyclical patterns of animal reproductive growth. Alaska Department of Fish and Game (ADF&G) data for over twenty years for Kivalina in northwest Alaska showed variations in the harvest of individual species, but consistent total harvest amounts per capita over time.

Cultural values are mirrored in the practices and behaviors that shape community interaction with the older adult, and through these activities the identity of the elder is defined. Native elders associate the manifestation of these cultural values as "respect." When Graves and Shavings (2005) analyzed the data from the NRC Voices of the Elders Conferences, they concluded that the ability to share wisdom is seen as the primary role of the elder in Native communities. Elder speakers indicated that access to their children and grandchildren was important, in that the elders felt that they had a responsibility to share their wisdom:

> When he looks at his grandchildren, his great grandchildren, he feels "normal" when they come to see him. . . .
>
> My husband needs to leave to get [medical] care . . . at the same time he wants to help his whaling crew get ready for the upcoming whaling season.

Data from the Iñupiaq Elders Study indicated that as a member of extended families, only 17.8% of the rural elders surveyed reported that they frequently ate alone, versus 22% of urban elders. The number of individuals living in rural households ranged from one through fifteen and a mean of 3.63 ± 2.69, compared to somewhat smaller urban households with a range of one through nine people and a mean of 2.94 ± 1.94. Rural and urban samples were recruited using different methodologies, and larger urban samples may yield different results.

Elders councils are commonly found in rural Native communities. Elders councils were found in all of the ten villages where our teams collected data, and all nineteen villages that participated in the NRC Voices of the Elders Conferences. We received reports that elders councils met on a regular basis and when special problems arose. Elders also serve on village government boards in both participatory and honorary positions. In one village, our research team was invited to attend an elders council meeting during our stay, although our senior research member (age eighty-three) was the only one of our group asked to sit at the main table. The principal topic for discussion that day was planning activities for the youth during the summer.

VALUE OF COMMUNITY LIFE

In order to quantify the values of community life as part of the Iñupiaq Elders Study, survey questions were included to illustrate the mental and physical components of quality of life as defined by Ware et al. (1996). The multidimensional SF-12.v2 tool (Ware et al. 1996) provided two scores:

1. a physical component score (PCS) that is a composite score based on levels of self-perceived physical function that include the role of physical, bodily pain and general health; and
2. a mental component score (MCS) based on self-perceived mental health, role of emotional,[8] social function and vitality (Table 1).

Rural elders had significantly higher scores than the national SF-12 norms for mental functioning (MCS). The normed MCS score for U.S. populations was 49.37 (Ware 2005); the rural Alaska Native score was 53.9 ± 1.1 ($p = 0.001$), and the urban score was 51.3 ± 1.7 ($p = 0.263$). Comparing groups by location, rural elders reported higher mental health scores than the national norms and higher scores than those reported by urban elders ($p = 0.040$). Rural elders also reported higher social functioning scores than urban elders, although the differences were not statistically significant.

Physical functioning component scores (PCS) were examined. Both groups reported lower scores than national SF-12 norms for physical functioning, which was 49.63 (Ware et al. 2005). Total PCS for rural elders were slightly higher than scores reported by urban elders, 43.4 ± 1.5 and 39.1 ± 6.2, respectively. Component scores of the physical functioning scale received further examination. Comparing Iñupiaq elders by location, rural elders reported less pain ($p = 0.001$) and more vitality ($p = 0.007$) than reported by urban elders. All mean PCS component scores

8. Ware et al. (1996) used the terms "role of physical" and "role of emotional" to describe tangible and intangible aspects of health.

Table 1. Means and standard deviations of SF-12.v2 Total Mental (MCS) and Physical (PCS) Component Scores as reported by Alaska Iñupiaq elders living in rural and urban locations

	SF-12 Normed Scores	Rural n = 52	Urban n = 48	t-test between location	p-value
Total Mental Component Score	49.4	53.9 ± 1.1	51.3 ± 1.7	1.36	0.177
Social Functioning	50.0	48.2 ± 11.6	43.7 ± 12.8	1.85	0.067
Role Emotional	50.0	46.4 ± 13.0	48.1 ± 12.9	–0.66	0.513
Mental Health	50.0	53.9 ± 9.5	49.9 ± 9.4	**2.08**	**0.040**
Total Physical Component Score	49.6	43.4 ± 1.5	39.1 ± 6.2	**2.36**	**0.020**
Physical Activity	50.0	47.4 ± 12.9	46.3 ± 9.7	0.47	0.636
Role Physical	50.0	47.1 ± 12.3	46.9 ± 10.6	0.07	0.949
Body Pain	50.0	39.8 ± 14.9	26.0 ± 10.4	**5.34**	**0.001**
General Health	50.0	44.7 ± 12.2	45.1 ± 10.8	–0.21	0.835
Vitality	50.0	58.8 ± 11.1	53.4 ± 7.7	**2.78**	**0.007**

Higher SF-12 scores indicate higher functioning (such as higher body pain score indicates less pain and greater ability for physical functioning). **Boldface** text indicates significant differences as indicated by p-values less than p = 0.05.

were less than the SF-12 normed scores for U.S. populations with the exception of vitality.

For elders who participated in the Iñupiaq Elders Study as a group (n = 75), participation in family activities correlated to higher SF-12.v2 physical functioning scores (rho =0.26, p = 0.023), and higher SF-12.v2 mental functioning scores (rho = 0.24, p = 0.040) (Table 2). Relationships between participation in community activities were strong for SF-12.v2 mental functioning, but only approached significance.

While the reported rho values are statistically significant, indicating a high probability that the measure of the relationships did not occur by chance, the rho values were modest, indicating these variables explain only part of the impact of these variables on the SF-12 PCS and SF-12 MCS scores.

The authors proposed in this essay that when elders are able to fulfill their anticipated and expected roles, the elder has achieved valuable functioning. The traditional harvested food lifestyle allows elders to maintain valued roles to provide guidance and support for young families. The authors suggest that the continued community involvement appears to make significant contributions to the mental and physical health of Iñupiaq elders. It is possible that the ability of Iñupiaq elders to continue in advisory and supportive roles may be at the heart of defining valuable functioning for the elders. Elder speakers at the NRC Voices of the Elders Conferences said:

> I listen to my father and my grandfather. They tell me how to approach the game, how to hunt, watch the weather, watch the ocean currents, conditions, ice conditions, the weather. I've learned those from my own experience and my father telling me. I can prove that they were right. This I tell to you.
>
> The elders are the backbone of the community, the elders are always there, the elders. Always have

Table 2. Spearman's rho correlations among measures of functioning as reported by combined rural and urban Alaskan Iñupiaq elders (n = 75)

	Measures of Functioning			
	SF-12.v2 Physical Functioning Component Summary Score (PCS)		SF-12.v2 Mental Functioning Component Summary Score (MCS)	
	rho	p	rho	p
Community support variables				
Participation in family activities	0.26	**0.023**	0.24	**0.040**
Participation in community activities	0.13	0.260	0.20	0.085

Boldface text indicates significant relationships as indicated by p-values less than p = 0.05.

> the elders on the representatives like the council, we always had one or two elders on the council. [The] woman's club needs to have one or two elders on the board. . . . they always watch, they are the overseers. They make sure everyone comes to the meetings . . .
>
> They always stand up first and give advice. They say something of comfort. They hear anything that's not quite right, they step in and say something. Elders aren't afraid to say what they think and believe. [They motivate] . . . the club to . . . do thing in the village because they [make the group] . . . more willing.

PARTICIPATION IN TRADITIONAL FOOD ACTIVITIES PROVIDE DAY-TO-DAY STRUCTURE

Elders remain at the core of the harvest process (in planning, timing, and supplying hunting equipment and tools), even though younger community members may perform the actual harvest work. Elders frequently provide cash for the purchase of fuel and ammunition that younger hunters need to secure the harvest. Through this relationship, elders are able to have their allotments of fish and game. Many elders expressed concerns surrounding the loss of the Alaska Longevity Bonus[9] in 2004, and wondered how their role would change in the future because of diminished ability to fund the harvest activities of young hunters.

At a Nalukataq (whale festival) in a large coastal Iñupiaq village during the early summer of 2004, we watched as whaling captains relinquished their customary roles to direct the distribution of whale meat to elders of their families who then made decisions as to the individuals who were to receive choice cuts of meat. In talking with elders throughout the week during the preparation for the festival, we learned that within the privacy of family groups, elder men had instructed and encouraged the preparation of the hunting crews. Elder women oversaw the routine cleaning of family homes and freezers while the hunt was in progress to prepare for the whale's arrival, as one would prepare for the arrival of a guest in their home. Between the harvest and the festival, elders directed the care and treatment of the meat and the preparation of the other special foods and gifts to be given away at the event.

Without exception, when we talked with elders about changes in their food resources that they have observed over the years, they expressed concern over the changes in the systems of obtaining food and possible uncertainty about future supplies of food. Their conversations and comments showed a group focused on problems concerned with their perception of declining access to Native foods. To elders, retention of lifestyles and food customs was the highest priority. The elders expressed the opinion that traditional food customs and related practices and beliefs to perpetuate food rituals involved with celebrations and the honoring of the deceased are declining. It is their opinion that once these rituals are lost, they will be lost forever. The elders said that the loss of food customs has been caused by a loss of knowledge of food preparation, loss of hunting and fishing sites, insufficient government-regulated wild food harvest quotas, and changing weather patterns.

Although there are younger members of the communities who are learning and practice the customs, the real knowledge continues to be held by the elders. Reinforcing the traditional methods with the application of modern technology perhaps may lessen the chipping away of their cultural heritage. For example, one Tlingit elder worked with her son to make "Indian chips" (dried fish skin) in a dehydrator designed for vegetables and fruit. She was able to retain the flavor of her life while using her skill within her reduced physical capabilities since she can no longer stay up all night watching a fire to keep the drying process uniform.

Wiedman (field notes, summer 2001) describes his observations of an aging couple using a variety of old and new methods to process fish and berries for the freezer and smoked coho salmon for a memorial party scheduled for the fall. He talked about the seasonality of the various types of fish and the government regulations for what can be caught and when. When asked about how they smoked the fish, she said the smokehouse belonged to her mother. She then picked up the phone and called her mother to ask if the smokehouse was open for my visit. The smokehouse was just a few feet from the back door, down a plant lined path. Smoke gracefully rose from the center of the roof.

The close density of surrounding houses and buildings impressed upon Wiedman that this was the oldest part of the community, with buildings dating back to the

9. The Longevity Bonus was paid to individuals over the age of sixty by the State of Alaska and was abruptly ended in the spring of 2003. Each elder formerly received $250 per month.

1800s. With a quick introduction she left him standing there with his head in smoke between rafters full of a wide assortment of fish of different sizes and colors. Wiedman's observations continued:

> The hostess's "brother" went about his task of collecting dark thin dried salmon strips the size of candles hanging from the rafters. The sunrays through the smoke-hole produced an array of colors of the fish strips. The smoked fish were a translucent white and pink to a burnt orange in the sunlight. The "brother" talked about the kinds of fish, where they were caught, who caught them, and how the colors indicated how long they were in the smoke. He mentioned that this smoke house belonged to his sister and her mother's people. In a joking tone, he noted that he was not her brother, but was married to her sister. He spoke about the types of wood burned, where they traveled to get it and how the fire in the central metal fire place was kept smoking without producing too much heat. Throughout this time, he constantly kept busy removing the cotton string from the fish strips just removed from the rafters. These observations illustrate the continuing roles and power of elders in this four-generation extended family. Both of these elder males no longer actively fish for a cash income, yet they were fully involved and had specific food production roles and tasks. This complex web of family and community responsibilities combined with a traditional food lifestyle maintains a range of daily and seasonal activities that may promote physical and psychological wellbeing for all ages, especially elders. (Wiedman field notes, summer 2001)

MEASURES OF PHYSICAL FUNCTIONING

Elders' participation in the food-gathering activities is partially influenced by their level of physical functioning. In order to measure the importance of activities of daily life and physical abilities, the survey instruments of Katz et al. (1963) and Lawton and Brody (1969) were included in the Iñupiaq Elder's Study. The Activities of Daily Living (ADL) (Katz et al. 1963) and Instrumental Activities of Daily Living (IADLs) (Lawton and Brody 1969) scales are widely used to evaluate levels of physical ability to perform daily self-care activities. ADLs include self-care activities such as bathing, eating, and dressing, and IADLs include more complex instrumental activities of daily living such as making meals, shopping, and cleaning. The ADLs and IADLs were developed for urban-based mainstream populations and may not capture the activities of the harvesting lifestyle found in Alaska communities.

The low frequency of ADLs reported by rural and urban Iñupiaq elders were not significantly different (X2 = 2.32, p = 0.127). Both groups reported a few limitations of ADLs: 10% of rural elders had at least one ADL limitation and 20% of urban elders did. The most frequently reported ADL identified by the total group were difficulties with walking (12%), and difficulties with bathing (9%).

Similar patterns of few IADLs were found between rural and urban Iñupiaq elders ($X^2 = 0.09$, p = 0.763): 25% of rural elders reported at least one limitation, and 22% of urban elders did. The most frequently reported IADLs were difficulties in performing heavy housework (18%) and problems with shopping (12%).

Data from the NHANES III study conducted in 1988–1994 among individuals fifty-five years and older indicated that of the national sample of the U.S. population, 33.7% reported problems with walking, 36.8% with bathing, 51.6% with heavy housework, and 34.8% with shopping (NHANES III 1988–1994).

Within Native communities, physical abilities do not appear essential when warning crews of subtle weather changes or notifying family and community members when conditions are "right" to put out the salmon nets. The advisory role established through cultural traditions allows older individuals to have options to direct their own lives and continue to achieve "valuable functioning" even though physical abilities have changed or are changing. The authors propose that if the elders are not in their community surroundings, their participation in community activities would decrease and thus the level of perceived valuable functioning may be also diminished.

TRADITIONAL FOOD CULTURE PROVIDES NOURISHMENT AS RECIPIENT OF TRADITIONAL NATIVE FOOD SHARING

In Alaska, working as a family group harvesting and distributing harvested foods is identified as a food-sharing network. The networks reinforce the cultural identity of the group as well as enabling the procuring and sharing of essential food. Food sharing in Alaska is a traditional cultural practice that occurs to the present day (Callaway 2003; Caulfield 2002; Magdanz et al. 2002) and is one of the defining attributes of the "harvested wild food, or subsistence lifestyle."

Consistent with Mauss's (1988 [1954]) classic anthropological writings highlighting the benefits of reciprocal relationships evidenced by gift exchanges, feasts, and gifts of food, food-sharing networks link generations and

families through a web of social interactions. Also transmitted are community norms and standards. Food sharing networks appear to serve as a highly resilient response to uncertain food supplies (Magdanz et al. 2002) through the distribution of harvested food to members of the kin network.

Food sharing data were collected in five Iñupiaq villages in northwestern Alaska (Buckland, Deering, Kiana, Kivalina, Noatak, Shungnak) from 1994-2008 by field anthropologists from ADF&G, using protocols published in Magdanz et al. (2002). The purpose of the ADF&G extensive data collection was to describe characteristics of harvesting and food-sharing networks in rural Alaska communities.

Smith (2007) in the Iñupiaq Elders Study examined a small subset of the ADF&G food-sharing network data to determine the impact of the shared foods on the nutritional intake of Iñupiaq elders. To accomplish this, ADF&G food-sharing data from Buckland and Deering were compared to data from urban Iñupiaq elders living in Anchorage collected using the same ADF&G survey forms by Smith and her students. Only two variables from the ADF&G survey were used and compared between two rural communities (Buckland and Deering) and an urban location (Anchorage):

1. differences between gross total amounts of harvested foods (calculated from the combined total of food received); and
2. the number of food-sharing events that provided food to elders' households.

Although different sampling techniques described previously were used for the rural and urban samples, the household networks of rural Iñupiaq elders had almost twenty times more food-sharing events than urban networks. Rural elders reported a mean of 55.1 ± 8.4 food-sharing events with a range of 12 to 217, compared to urban elders' 2.9 ± 0.5 events with a range of 0 to 13. Rural households also shared more pounds of harvested foods. On average, rural households received 2,606 ± 2,724 pounds with a range 0 to 12,738, ten times more than the urban households' 251 ± 421 pounds with a range of 0 to 1,600.

While the harvest amounts vary, the remarkable adaptation of the rural traditional lifestyle within urban Alaska is important. Food-sharing networks bind rural and urban family members together as well as reinforce cultural heritage that both groups hold in common. Climate changes in Alaska that affect food harvests may severely impact the social fiber that supports both rural and urban Native elderly. Modest food support resulting from fewer food sharing events may increase the vulnerability of the health and well-being of Native elders. These concerns should also be studied in any investigation of impacts of climate change on Alaska Native individuals and communities.

The term "harvested wild foods" was used to designate wild foods that are obtained by hunting, fishing, or gathering compared to "store-bought foods" that are purchased at the store, or ordered and shipped to the community. (A full description of factors related to the nutrition status of such foods is found in the other paper by Smith et al. in this issue of AJA). Alaska and Canadian Native populations continue to use high quantities of harvested foods on a regular basis (Kuhnlein et al. 2004; Smith et al. this volume), in contrast to declining use of indigenous foods reported among the Hopi (Kuhnlein and Calloway 1978:16–23) and Navajo Indians of the southwestern United States (Wolfe 1985:323–344).

Rural elders in our Iñupiaq Elders Study reported that harvested foods contributed 64% of the total reported intake of protein and over half of the intake of riboflavin (61%), iron (54%), and phosphorus (51%). For urban elders, harvested foods generally contributed less than half of the total nutrients consumed: protein (42%), riboflavin (39%), iron (40%), and phosphorus (30%). Even though urban Iñupiaq elders received smaller quantities of harvested foods than rural elders, the amounts are an important contribution of vital nutrients.

For both groups, intake of protein by males exceeded minimum requirements by three-fold. Mean protein intake by rural women exceeded twice the minimum protein requirements for women. Urban women over seventy years of age reported mean intakes of 69 grams, slightly above the minimum Recommended Dietary Allowance (RDA) of 46 grams. The mean calorie intake reported by Iñupiaq elders living in Buckland and Deering (3,594 ± 2,122) and in Anchorage (4,319 ± 3,129) exceeded federal nutrition guidelines of the dietary reference intakes (DRI) published by the Institute of Medicine (2000, 2002) of approximately 2,000 kilocalories.

However, these guidelines may not be appropriate for active individuals living in an arctic climate. Recommended calorie intakes are based on data collected in the series of Nutrition and Health Examination Studies of the general U.S. population by the Department of Health and Human Services, Centers for Disease Control and Prevention (NHANES 2008). The NHANES studies did not include

assessment of Native populations, nor populations living in Alaska. The U.S. Army estimates that individuals participating in winter maneuvers in Alaska may require higher energy requirements that may exceed 4,500 calories per day (Edwards and Roberts 1991; King et al. 1993) in order to maintain body weight.

Body weights result from energy intakes that are moderated by physical exercise. Excess energy intake has an outcome of increased body fat. Mean Body Mass Index (BMI), a measure of body fat (Keys et al. 1972), was 27.3 ± 4.9 for rural elders and was 26.6 ± 5.3 for urban elders. While the use of BMI to assess Native populations in arctic climates may be problematic (Smith et al. 2004), nevertheless, the mean calculated BMI for the surveyed elders was only slightly above estimations of "ideal" BMI of less than 25. Individuals at the upper end of the standard deviations may exceed a BMI of 30, which may indicate excessive body weight. However, Smith's earlier analyses of body weight of Alaska women failed to correlate BMI with increased body fat.

HARVESTED FOODS PROVIDE FOOD SECURITY

From the outside (etic) perspective, there appears to be a surplus of food in rural Alaska. The authors were surprised to find that 37% of the elders surveyed reported that they were worried that they may not have enough to eat. Food insecurity reports from younger rural Alaska women were also 37% in the WIC Healthy Moms Study (Smith et al. 2008). The younger women who reported being food insecure reported moderate intakes of calories or protein (mean intake was 1,493 calories with 59.6 grams of protein). This may suggest that the expression of food insecurity by those living within rural Alaska communities may be influenced by anxiety based on actual or perceived changes in social, economic, and environmental conditions.

To understand this phenomenon, we discussed the high rates of food insecurity reported by the younger women from the WIC Healthy Mom Studies[10] with elders during our visits to the villages in 2004–2005[11] and at the NRC Voices of the Elders Conferences.[12] Elders could recall times or heard first-hand accounts in the oral tradition of food shortages or of outright famine in their communities. This could explain why some elders remain concerned about food security in spite of the appearance of ample staples. In some ways, the elders were looking ahead with concern for what the future might hold (LaBelle field notes, 1988–2008).

The literature is limited on intergenerational anxiety or concern about sufficient food by younger members in response to periods of starvation experienced by their parents in previous years (see Yehuda et al. 1998:841–843 and Sindler et al. 2004:189–196 for World War II holocaust survivor reports, for examples). However, the closeness of family members and the emphasis on oral tradition among Alaska Natives may have influenced feelings of an insecure food supply in rural Alaska among younger Native women. It is also possible that these younger women (age nineteen to thirty-eight) living in rural areas surveyed in 2001 may have had good reason to be more concerned than elders about the adequacy of the overall food supply, but only a focused investigation on that topic would reveal whether this was true or not. However, the percentage of both elders and younger women in villages who expressed food insecurity concerns is noteworthy. It is possible that food insecurity may increase as rising fuel costs for heating homes and for operating hunting/fishing modes of transportation in rural Alaska negatively impact both food harvests and household income available to purchase food at village stores/co-ops or to have food flown in from urban centers.

There may be other anxiety-producing influences in Alaska Native communities related to the elders' perceptions of insufficient food for older village residents. Campbell (1991) in her classic definition of food insecurity included the precept of "socially acceptable food." The impact of recent environmental protest on the harvest of arctic wildlife and sea mammals (seals, sea lions, and whales) in the popular press may invoke personal conflict between the elders' beliefs of their traditional cultural role as stewards of land and water resources versus their portrayed abusive role as "harvesters" presented in the media. High rates of food insecurity could also be an expression

10. Villages in the WIC Healthy Mom Study asked to remain anonymous. Their locations were a coastal Tlingit village in southeast Alaska, an Alutiiq village located on the Alaska peninsula, a coastal village in southwestern Alaska in the Yukon-Kuskokwim Delta, and a coastal village on the Beaufort Sea. Data from Fairbanks was used for a comparison (n = 103).

11. The villages of Buckland and Deering asked to be identified in the Iñupiaq Elder Study (n = 101).

12. Voices of Elders Conferences were held in Angoon, Barrow, Bethel, Buckland, Dillingham, Fairbanks, Juneau, Kodiak, Kotlik, Kotzebue, Metlakatla, Napaskiak, New Stuyahok, Nome, Nuiqsut, Old Harbor, St. Paul Island, Unalaska, and Wainwright (n > 600).

of the elders' concerns towards changing village social climates. Elders may fear that the anticipated holistic care (including provision of food) may not materialize or continue in the future.

RESPECT FOR SOURCES OF FOOD—BOTH ANIMAL AND PLANT

The respect for all aspects of the universe is integral to the relationship of the Native peoples with their food sources. Kawagley, a Yup'ik Native from southwest Alaska, wrote, "Alaska Native worldviews are oriented towards the synthesis of information gathered from interaction with the natural and spiritual worlds so to accommodate and live in harmony with natural principles and exhibit the values of sharing, cooperation, and respect" (Kawagley 1995:11). He quotes Lopez who concluded, "The spiritual landscape exists within the physical landscape" (Lopez 1986:11). He writes of beliefs regarding the delicate balance between the "human, natural, and spiritual world" (Kawagley 1995:15) and quotes Chief Seattle (1790–1866) who stated, "This we know: the earth does not belong to man; the man belongs to the earth. All things are connected like the blood that unites us all. Man did not weave the web of life; he is merely a strand in it. Whatever he does to the web, he does to himself" (Kawagley 1995:17).

The intertwining of people with other occupants of the physical world provides a holistic foundation for relationships between humans and the environment and fosters observance of spiritual beliefs. Elder speakers at the NRC Voices of the Elders Conferences reinforced Kawagley's observations:

> Growing up with all these traditional values, when I was observing my parents and grandparents, they really respected the land, the rivers and animals, and the fish and birds. They put back into the earth the bone remains of the animals instead of putting them in the trash or fed [the bones] to the dogs.
>
> One thing that my grandmother told me also to share things…never to be stingy.…I remember growing up I went ptarmigan hunting and caught a lot of ptarmigan…and when you gave more… more will come back to you.…Sure enough those animals tend to come to you when you give some of your catch away and share with others.…
>
> They went out to get it but the whale put a hole in the Qayaq [boat], and it sank so far down that they said, "Qayaq stop!" And the whale stopped. Somehow they paddled across out there and made it and they spent all night there.…He was the last whale hunter.
>
> When they catch game like seal, walrus, whatever is edible. They try to share it with neighbors. They said it has returned; somehow even they don't know about Creator, they know there's somebody providing resources for them at that time.

Over coffee one morning, an elder who had lived most of his life "Outside" (meaning outside of Alaska, in the Lower Forty-eight) said that when he came back to his village and harvested a seal, it was difficult in his old age to crawl across the ice to put water in the seal's mouth. We asked about the cultural basis of this practice, but he told us that he didn't know. What he told us was, "When I don't do it, I feel bad" (Easton field notes, 2005).

HARVESTED FOODS CONTRIBUTE TO A POSITIVE VIEW OF LIFE

Participating in harvested food traditions appeared to be a significant contribution to a positive view of life. Participants' views of life were assessed using self-reported health assessment and by the perceived health benefits of harvested foods.

Associated with all food gathering are many adventures and resulting stories. Telling these stories livens conversations for many years. Although not specifically defined or measured, humor is a vital part of rural life and food gathering. Gentle teasing and repeated descriptions are part of many conversations and may contribute to the benefits of this lifestyle. Our team members were included in the teasing and the laughter.

SELF-REPORTED HEALTH ASSESSMENTS

During visits to rural Alaska communities, a repeating phenomenon was observed. Elders expressed a general sense of optimism about life that was reflected in the reporting of their general health, even when their observed health was considered to be quite marginal. Self-reported general health is an expression of the nontangible aspects of health and is often a reflection of an individual's perception of their ability to function within his or her environment beyond the mere presence or absence of Pathak's (1996:217) "five D's": death, disease, disability, discomfort and dissatisfaction. Among rural elder respondents, 81% reported their health to be "excellent," "very good" and

"good," compared to 76% reported in urban areas. Only 19% of rural elders and 25% of urban elders reported their health as "fair" or "poor."

Elders stated that their health is better in the rural than in the urban setting, and some individuals reported that they moved back to rural villages for this reason. Being away from family was one of the main reasons that elders reported why they were reluctant to move to urban areas, even to seek health care.

Alaska rural elders reported few limitations of their activities, even if their observed health was less than ideal. Combined observations of rural elders bear this out.[13] For example (Smith and Easton field notes, 2004–2005):

> "Barry" brought us a jar of frozen fresh salmon eggs that he had prepared by layering the roe and salt in canning jars, then storing them in the freezer. We ate them on the homemade bread he also shared with us. Barry is 54 years old, partially deaf, and has two arthritic knees. He is often asked to go out-of-state with the village fire fighting team to maintain their base camp. His leadership style and camp management skills have won favor with the Federal Forestry Service personnel. He produces and sells homemade bread and doughnuts to keep "busy" and to supplement his income.
>
> "Lucille" cares for her husband, and sells hand woven grass baskets for extra cash. She said that her aunt showed her how to pick grasses to make baskets using the tall green grass that grows on the coastal sand dunes. Her aunt was trained by her grandmothers' sister (Lucille's great aunt). Lucille has charge of her grandson while her daughter works at a job in another community near by. We frequently saw her zipping around town on her 4-wheeler with the baby's head perched on her back, peering from beneath her kuspuk.
>
> "John" reports that he is often unable to get out of the village following his stroke. In town he walked with a profound limp, and accepted a ride on a four-wheeler when one of the young boys in the village stopped. He said that he had to quit hunting 12 years ago. He lives with a niece, which was fine, except that he could get Native food only two-three times a month. As a result he had to eat a lot of "white man's food." He would have liked things to be different, but "this was the way it was."

A positive view of life was not unexpected from this population. Fienup-Riordan (1983:175–186) wrote of the Alaska Native philosophy that words have power to change the future. It seemed possible to us that if elders reported their health as "good," their health would be "good." Similar positive projections on future events have been reported by biologists when recording information about the harvest of wild game, sea mammals, and fish. As one elder said, "the fish have ears," implying the belief that the elder's comments about the fish could determine the elder's ability to catch the fish in the future (Smith field notes, 2005).

PERCEIVED HEALTH BENEFITS OF HARVESTED FOODS

Harvested wild foods are believed to have healing properties. Narrative data from the NRC Voices of Our Elders Conferences supported the belief that health is benefited by consuming harvested foods.

> I told the doctor, I'm going home; I don't like White (man's) food…(home to) eat my Eskimo food and I don't want to be sick no more.
>
> If we don't receive our foods, there is something missing because not only do the food (feed) our physical self…they also nourish our spiritual and emotional self…because they bring back a lot of memories and happy times.

The elders perceive that harvested foods have greater value than similar non-Native foods, such as harvested salmon is better than commercially canned salmon. A number of health research projects confirm the elders' traditional wisdom and have reported the biological importance of eating Native foods. Adler et al. (1996) studied traditional diet and harvest activities in villages in southwest Alaska and the Alaska interior and found significant trends in the relationship between eating a traditional diet high in protein and improved glucose tolerance, when combined with adequate levels of exercise. Other studies (Murphy et al. 1992:1390–1392; Murphy et al. 1995:680; Murphy et al. 1997:275–277) found that individuals who reported eating more traditional food were less likely to have diabetes and hypertension. Wiedman (1987:43–71) found similar phenomena in his work among the Oklahoma Cherokee, where diabetes increased after individuals transitioned to store-bought foods away from their traditional food patterns, away from lower-fat foods and higher exercise.

13. Fictitious names have been used and similar observations of several individuals have been combined.

The traditions surrounding harvest rituals contribute special value beyond the actual food gathered. An example was presented during one of three field visits. The oldest woman in the village was very upset that her family was not going to take her to fish camp so that she could pick berries. She told team members in numerous conversations that it was "time" to pick salmonberries. Even though she was not without food, it appeared that she thought her life was not complete because she could not participate in the act of food gathering. Despite their age, elders want to continue going to locations of summer camp and to the places of familiar activities. We asked a respected community member if her family's assistance in our research efforts was causing a conflict with their mother's (and grandmother's) desire to pick salmonberries. We were told that her grandson was taking her to fish camp to pick berries that afternoon.

In a small village in the upper Aleutian Islands, local leaders as well as the elders told us that "the sea is our way of life." One community leader mentioned that after the *Exxon Valdez* oil spill when village fishermen were prohibited from fishing during the 1989 season, the U.S. government sent cases of commercially canned salmon as a replacement. She said, "It wasn't just loss of food; it was the loss of our heritage. Fishing is what we do" (Smith field notes, 2001).

In many Sugpiat villages impacted by the *Exxon Valdez* oil spill, the elders' role in overseeing the gathering of subsistence foods from the shoreline was interrupted. The event disconnected the elders from their community members culturally, physically, and spiritually. Some mussel, cockle, and clam beds remain visually contaminated by the oil spill. Elders continue to grieve twenty years later; even the simple pleasures of walking on the beach can evoke memories of the destruction. Elders also reported changes in their health when they had to rely on processed and canned foods, especially increases in hypertension, heart disease, stroke, and diabetes in communities impacted by the oil spill (LaBelle field notes, 1988–2008).

Elders often reported negative health consequences when they have to rely on western processed and canned foods. LaBelle theorized that this may explain why "potlatches" featuring harvested foods shipped in from outlying rural communities are so popular among urban Native people who have little or no access to traditional foods and who are away from extended families (LaBelle field notes, 2008).

Another elder summarized the multifaceted holistic nature of the benefits of traditional foods in this way:

> When we eat our food, we enjoy and we remember being in fish camp when we eat it. And when we get a lot of salmonberries, we do think about our experience in picking berries and consider them blessing. There's also the fact of eating together with family and spending time with family cutting fish, family bonding just preparing the food. So it's a lot of mental health, spiritual and family bonding just eating it. Our food has a lot more holistic approach to it when we eat it.

DISCUSSION

"Elder" is a status that has common threads throughout all Alaska Native cultures. The range of Native elders from whom these data flow strengthens the conclusions presented. The proposed conceptual model presented in this paper is an effort to describe aspects of participation in harvest-based food culture as it impacts valuable functioning achieved by the fulfillment of traditional roles for older individuals living in Alaska Native communities.

Data presented here indicated that harvesting of traditional foods used knowledge patterns set forth by previous generations that are transmitted through current elders. A striking illustration of their importance in food harvests was our experience of a whaling captain saying that he had to get to the beach early so that he would have time to listen to the elder men's advice and warnings before the hunt (Smith field notes, 2004). Even with the numerous activities involved in preparing for a whale hunt, he credited the last-minute information given by the elders with keeping his crew safe and for his success as a whaling captain. When we attended the Nalukataq, the whale festival, former whaling captains, now in advisory roles, took turns standing on the bluff to watch conditions at sea.

On the other hand, elders living in urban areas may have limited social status based on the lack of a social position to fill related to food harvesting. Psychological and social tensions may develop and affect the individuals' views of their quality of life when away from their home communities.

Participation in the activities of harvest and food preparation served to unite families with their history, and food sharing also provided a structure for family interdependence between communities (Burch 2006). Narrative data indicated that culture and food are inseparable for elders. As one elder reported, "Our food is medicine. It

feeds the body (and)…feeds the Spirit" (NRC Voices of the Elders Conferences).

It appears that in the minds of the elders, retaining lifestyles and food traditions is one of their highest priorities. If we were to summarize all the comments made by the elders, as a group, the elders' conversations and comments focused on problems concerned with the availability of sources and declining access to Native foods. The factors influencing the disappearance of Native food customs and knowledge are complex as communities react and adapt to globalization, technology, and global warming. Native communities in Canada reported that they face increased competition with recreational and commercial fisheries of salmon, halibut, and crab, and with game regulations from multiple government agencies (Nadasdy 2004). Similar competition has been reported in Alaska communities as well. The loss or restriction of hunting and fishing sites may further reduce opportunities for elders to share with younger generations the food preparation knowledge needed to perpetuate food traditions, including those that comprise a major part of honoring deceased ancestors and his or her family. Wage-earning jobs outside the villages may pull youthful resources away from the influence of elders. The extensive role of food in the traditions of memorial festivals mirrors the elders' values of sharing and reciprocation. These events are much like the stories told by elders of sharing food today, resulting in increased future harvest. Preservation of food becomes a symbol confirming traditional values and beliefs. Elders predict that once food rituals are lost, the rituals and ceremonies will be lost forever and that the elders must be teachers to the younger community leaders. The authors suggest that participation in the harvest of food forms the core of valuable functioning for Alaska Native elders, as well as providing essential sources of nutrition for sustained activity.

LIMITATIONS

Consistent with Fisher and Ball (2003:24) there may limitations inherent when broad complex social systems are examined in brief studies: "when the health, social and economic disparities of American Indians and Alaska Natives are viewed outside of the historical context, that events and practices have the potential to be misunderstood and to be addressed in ways that perpetuate rather than resolve problems."

There is always the possibility that as outsiders, the authors have oversimplified or misunderstood the complex nature of the elders' comments. This paper in no way attempts to minimize the importance of cultural differences and the benefits of diverse diets of the 229 federally recognized Alaska tribes. It was our goal to use their comments to increase our understanding of harvested food customs and the relationship to quality of life as older individuals living in Native communities move through the aging process.

One of the goals of the authors is to provide data to the villages as they seek their own solutions to problems concerning preservation of the harvested food culture within their communities. The application of the information presented will no doubt be as diverse as the communities from which the constructs were derived.

Developing a representative sampling technique for urban elders was difficult. Thus the data collected in this study may be skewed and ability to generalize these data to other urban Native elders may be weak.

CONCLUSIONS

Consistently in testimony from all locations, be it rural or urban, the elders wanted greater access to Native foods and reported that they did not feel as well when they did not have it. The narrative data suggests that universally across all groups was the sense of purpose (and thus well-being) that came from the elders' involvement in being part of the harvested food culture. It was not only the act of eating fish, but also the planning prior to harvest, the actual harvest, and the processing and distribution of the harvest.

Our conceptual model (Figure 1) of harvest-based food culture presented components of valuable functioning. These expressions included tribal history; a positive perspective on life; family, and community; participation in Native life, food sharing, and food security; and respect for the land. Valuable functioning, as expressed by Alaska Native elders, is multidimensional, encompassing social, cultural, and psychological influences, with food and food-sharing processes as the keystone. Valuable functioning includes the availability of and access to culturally significant foods, as well as the community interaction that coexists as part of the food harvesting and food-sharing processes. The elders' view of harvested food appears to incorporate both objective and subjective experiences, and throughout this process the value of the elders' knowledge is reinforced. The importance of routine activities is consistent with Schlettwein-Gsell's (1992) view that quality

of life encompassed a food component. She proposed that the importance of food-related behaviors increased with age, especially routines that surround food that she proposes equates to the pleasure of the food experiences.

In rural communities, extended family members and kin-based food-sharing networks provide not only food for the elderly but also socially structured food activities (such as planning for the hunt or harvest) and food practices (actual harvest, then the preparation and distribution of food). These food activities increase personal interactions between elders and the community. Food-related activities also provide opportunities for sharing traditional knowledge by the elders and obtaining valuable functioning. Elders in the rural setting are near "people they know," and it is a place "where they can get their Native foods" (Smith 2007:228). The application of the valuable functioning construct also includes the elders' ability to participate in family activities, food preparation activities, and the teaching of traditional cultural skills to younger community members.

These data indicate that the well-being of Native elders is intricately linked to continued use and access to land and natural resources. As competition increases among various stakeholders both in and out of state, and as climate change scenarios deleterious to traditional food abundance unfold, the level of anxiety concerning the change also increases. These threats to community balance are not theoretical but are played out in day-to-day activities with implications for the health of not only elders but for other age segments of the village as well.

LaBelle summarized the importance of the findings:

> We know that the collection of foods to feed our bodies has other values, which creates an interdependence of the spiritual, family, communal and tribal survival constructs. Policy makers should acknowledge that other terms exist within the indigenous world; not just a term created for western usage in making laws and regulations for first peoples to follow. The sad thing here is that federal and state fish and game administrators have attempted to learn of the "subsistence" patterns of certain people, ultimately using that information to regulate their activities, sometimes with ruinous results. And that is because they are attempting to use western concepts and understanding based largely on western economic models while not acknowledging existing cultural models. It's no wonder that some tribes view regulators with suspicion. (LaBelle field notes, 2008)

The quantitative and qualitative data support the value of harvest-based food culture in the lives of older Native individuals. In this context, elders' comments and our observations document how harvest-based food culture retains tribal history, myths, stories, values, and language. Food culture is significant in the lives of Native elders because of its relationship to traditional norms of respect for plants and animals, to their sense of food security, and to the special contributions traditional foods make to well-being and quality of life. Connections to the land and to community members and extended families are demonstrated in day-to-day activities and in a positive attitude toward the health and daily life resulting from contact with the Alaska environment.

Retention of food culture is integral to the retention of Native pride and history. Participation in these activities is viewed as essential preparation in fulfilling the role of an elder as a keeper of historical memory, linked to ensuring his or her significant future role within the community, and the survival of the community as well.

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