

QUALITATIVE ANALYSIS OF IN-DEPTH INTERVIEWS WITH NUTRITION
EDUCATORS IDENTIFIES CHALLENGES AND STRATEGIES FOR
SERVING ALASKA NATIVE CLIENTS

By

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Abstract

Alaska Native people experience disproportionate occurrence of diet and behavior related health disparities and have been recognized as a population in need of effective nutrition education. It is, however, unclear whether and to what extent nutrition education programs have been effective for improving the diets and health of Alaska Native People. The objective of this study is to understand nutrition educators' perceptions of challenges and most effective strategies for improving diet quality and health of Alaska Native people to inform program development. Nutrition educators serving Alaska Native Clients (n=20) were asked: What are the challenges their clients face to improving diet quality? What challenges do educators face to improving clients' diet quality? And, What are the best strategies for improving clients' diet quality? Interviews were in-depth and open ended. Qualitative analysis of interview texts showed that nutrition educators perceived challenges regarding subsistence foods and lifestyles, the need for cultural competence, and the benefits of employing local knowledge. Specifically, access to subsistence foods and lack of client knowledge regarding nutritional value, procurement, and processing of subsistence foods were identified as challenges to improving health. Cultural competence was identified as necessary for overcoming barriers associated with language, psychosocial issues, and client responsiveness. Working with a local contact/mentor was recommended as a source of information and means of increasing access to community members. Education which addresses the context of subsistence foods and lifestyles, is committed to cultural sensitivity and familiarity with clients, and seeks local input to guide programs and access audiences is an important means of improving effectiveness of nutrition programs for Alaska Native people.

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Chapter 1

Introduction

This thesis presents an assessment of Alaska nutrition educators' perceptions of the challenges to and most effective strategies for improving the diet quality and health of Alaska Native people through nutrition education. To do this, I leveraged data collected as part of the State of Alaska's needs assessment of its Supplemental Nutrition Assistance Program Education Program (SNAP-Ed). As part of that needs assessment, I assisted in development of in-depth interview questions designed to understand Alaska nutrition educators' perception of their clients' challenges to improving diet quality, educators' perception of their own challenges to improving their clients' diet quality, and educators' perception of the best strategies for improving their clients' diet quality. Using methods of qualitative analysis, I then performed thematic analysis on a subset of the interviews conducted with nutrition educators serving primarily Alaska Native audiences to identify challenges and strategies unique to providing nutrition education to that population. The objective of this study is to inform program development through better understanding of challenges, facilitators, and preferred strategies for serving a geographically, economically, and culturally diverse indigenous population, such as Alaska's. Collecting perspectives from Alaskan nutrition educators is an important first step in accomplishing this objective.

This introduction provides context for understanding the research presented in Chapter 2 which identifies nutrition educators' perceptions of the challenges to and best strategies for improving the diets of their Alaskan Native clients. It provides a brief overview of the diet related health disparities experienced by Alaska Native people, the effects of nutrition transitions on indigenous people and Alaska Native people

specifically, and the role of nutrition education in ameliorating these disparities in indigenous populations.

1.1 Alaska Native People and Diet Related Health Disparities

Alaska Natives exhibit disproportionate occurrence of chronic health problems associated with nutrition and lifestyle ^{1,2}. Alaska Natives have experienced a more rapid rise in the prevalence of diabetes than other Native American people ³⁻⁷. Prevalence of various forms of cardiovascular disease is either rising or remaining constant among Alaska Native people while falling among U.S. White males ^{8,9}. Some Alaska Native populations have experienced a 50% increase in incidence and mortality from cancers since 1969 ¹⁰. In 2012, the Alaska Native age-adjusted rate of death from diabetes, stroke, heart disease, and cancer (all sites) was 1.4 to 2.0 times that of White Alaskans ¹¹.

Alaska Native adults are disproportionately at risk for obesity, are less likely to meet nutrition and physical activity guidelines, and are more likely to report behaviors associated with poor health outcomes. According to the Alaska department of Health and Social Services, between 1991-2012, rates of obesity for Alaskan Native adults rose from 16% to 35% compared to 14% to 27% for white adults, and Alaska Native youths are more likely to be obese than White youths (16% compared to 10%). Among adults who believe that they do not get enough fruits or vegetables daily, 51% of Alaska Natives reported that availability was a barrier, compared to 34% of whites and 32% of other races. Both Alaska Native adults and youth are less likely to get recommended amounts of physical activity and engage in more hours of screen time per day than White Alaskans. Alaskan Native youths are more likely to consume 1 or more sugary drinks per day ¹².

1.2 Nutrition Transition and Indigenous People

Nutrition Transitions are shifts in dietary consumption and energy expenditure coinciding with economic, demographic, and epidemiological changes ¹³. Nutrition transitions usually result from recent transitions in developing countries from traditional diets high in cereals and fibers to more Western style diets which are high in sugars, fat, animal-sourced and processed food ¹³⁻¹⁶. This shift in dietary patterns is accompanied by an increase in chronic illness associated with nutrition and lifestyle.

For Indigenous people ¹⁶⁻²², rapid social, cultural, and environmental change have negatively impacted nutrition behavior and health by introducing energy-dense, low-nutrient market foods while disrupting participation in traditional lifestyles and food systems. Market foods are typically those which are produced elsewhere and shipped to stores for purchase, while traditional food systems can be defined as those which rely on foods available and culturally acceptable to a particular people from local natural sources ²³.

While transitions away from utilization of traditional food systems are associated with a variety of health disparities and obesity in indigenous people ^{24,25}, food and food systems play a greater role in human health than maintaining dietary sufficiency ²⁶⁻³⁰. Traditional food systems are shaped by diet related evolutionary pressures and develop as valid adaptive measures for a people inhabiting a particular environment ³¹, and consequently play important physical, psychosocial, and social cultural roles for both individual and community health ³².

1.3 Alaska Native People and Nutrition Transition

Similar to other indigenous people, Alaska Native people have experienced a transition to increased reliance on market foods and more sedentary lifestyles and away from traditional food systems and activities ³³.

Prior to European contact, Alaska Native people, including Athabascan, Eskimo, and Aleut groups subsisted solely through harvest of a variety local foods, including: sea mammals, ungulates, such as caribou and moose, fresh and saltwater fish, migratory waterfowl, berries and root-crops and other plant resources. It is suggested that the traditional subsistence diets and associated physical activities of Alaska Native people and other northern indigenous people inhabiting similar environments are protective against chronic disease ^{34,35}. Consumption of seal oil and salmon, which are high in omega-3 fatty acids, appears to lower the risk of glucose intolerance and diabetes ³⁶. Density of several key nutrients has been found to be higher in northern traditional food systems ³⁷. And, the omega-3 fatty acids consumed in marine resources prevalent in traditional subsistence diets protects against cardiovascular disease ³⁸.

Alaska Native peoples' world-views, local knowledge, and cultural identities developed in the context of traditional subsistence practices; such activities as harvesting, processing, and sharing local subsistence resources ^{26,27,39-41} tied people to landscapes and each other. Subsistence foods continue to be preferred and participation in subsistence lifestyles are proudly identified with by many Alaska Native people and communities ^{42,43}.

Today, most rural Alaskan diets are made up of both traditional and store-bought foods ³³. Local environmental and climatic change, shifts from rural to urban living, rising price or availability of fuel and market goods, and development of resources such as oil,

natural gas, and minerals extraction have disrupted traditional lifestyles ⁴⁴⁻⁴⁶, increased participation in the market economy, necessitated reliance on market foods, and limited the ability of many Alaska Native people to participate in traditional food systems through practice of the subsistence activities ^{27,47}.

While offering a degree of food security, the potential benefits of market foods are mediated by several factors ^{27,34,41,48}. The distance of Alaska, particularly its rural villages, from centers of market food production, long supply chains, and the cost associated with transporting and storing foods account for high food prices and a prevalence of highly processed, shelf stable foods and the lack of fresh fruits and vegetables in village stores ^{47,49}. The impact of high prices on availability of fresh fruits and vegetables is exacerbated by the low incomes of Alaska Native people compared with the rest of the State's population ^{47,50}.

1.4 Role of Nutrition Education

Programs and interventions have been instituted to ameliorate the barriers to healthy nutrition and lifestyles experienced by at-risk populations. Nutrition education programs have demonstrated effectiveness in reducing food insecurity ⁵¹⁻⁵³; improving nutrition behavior, such as increasing fruit and vegetable consumption ⁵⁴; improving metabolic outcomes among diabetics ⁵⁵; and increasing nutritional knowledge resulting in improved dietary behavior ^{56,57}. Studies investigating the effectiveness of education programs offered by the United States Department of Agriculture (USDA), such as the Supplemental Nutrition Assistance Education Program (SNAP-Ed.), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the Expanded Food and Nutrition Education Program (EFNEP) report positive outcomes

resulting in improved likelihoods that low income program participants will make healthy nutrition choices and choose more active lifestyles ^{52,57-62}.

This study uses data collected as part of a needs assessment of the State of Alaska's SNAP-Ed program. The federal SNAP-Ed program attained its present form in 2013 when, in response to costs associated with increased program participation, the program was restructured using the Healthy, Hunger-Free Kids Act of 2010. This established a nutrition education and obesity prevention program which includes behaviorally -focused, evidence-based nutrition education and obesity prevention interventions, projects, and social marketing campaigns ⁶³.

Separate state agencies across the US can chose to spend funding provided by the USDA however they deem appropriate, enjoying great latitude in how their SNAP-Ed funds can be employed. Ninety-eight percent of agencies utilize some form of direct education delivered to program participants by educators who are either state employees or contracted as vendors by the state ⁶⁴. While much of the nutrition educational materials used by educators are developed by Food and Nutrition Services (FNS) office of the USDA, educators can develop their own materials or make use of other available resources the feel are effective or appropriate ⁶⁵.

1.5 Nutrition Education for Indigenous Groups and Alaska Native People

Alaska Native people have been identified as a group in need of effective nutrition education⁶³. It is, however, unclear whether and to what extent nutrition education programs effectively improve the diets of at-risk indigenous populations, and specifically Alaska Native people ^{63,66-70}. Formative assessments examining contexts, specific behaviors and influences on behaviors, and resources available to nutrition

educators have been performed for other indigenous people ⁷¹⁻⁷⁶, but, to date, similar research examining nutrition education programs for Alaska Native people is limited.

Three qualitative investigations have sought to inform program development through better understanding of perceived challenges, facilitators, and preferred strategies for serving indigenous nutrition education program participants.

A 2008 study investigated factors contributing to effective nutrition education for Navajo families ⁷⁷. Aiming to identify culturally relevant nutrition education strategies for Navajo parents and educators of young children, the investigators conducted focus groups with mixed audiences of parents of pre-school aged children and nutrition para-professionals. Barriers to healthful eating identified included: food availability and cost, parental control over meals, food preferences and habits, time pressures, and knowledge and education on the part of parents. Enablers to healthful eating included: education and WIC programs, and modeling of positive behaviors on the part of family members and other role models. The investigators recommended community-level action to address the cost and availability of healthful foods, the need for stronger parenting skills and parental control over the food environment, and the need for knowledge and culturally relevant educational strategies for caregivers and children.

To identify barriers and enhancers to dietary behavior, an Australian study published in 2010 ⁷⁸ thematically analyzed semi-structured interviews exploring the experiences of Aboriginal people who had attended diabetes cooking courses. While participants' knowledge and cooking skills improved, many were unable to make desired dietary changes. Health status and recent diagnosis of a health condition were strong motivators to improve diets. Lack of family support and feelings of social isolation associated with dietary change barred some participants from making dietary change.

Poor oral health, generational food preferences, depression, and high food prices

were also identified as barriers to dietary change. The authors concluded that among the many barriers to dietary change faced by aboriginal people (social, financial, historical, medical), family was the key determinant in participants' ability to achieve dietary change.

Finally, a 2011 formative assessment ⁷⁹ used principals of social marketing to identify Chickasaw Nation women's perspectives on health and nutrition to inform a SNAP-Ed program in Oklahoma. Diabetes was identified as the major concern of focus group participants along with a preference for family based education promoted by elders, tribal leaders, and "everyday people." Times outside of work hours and tribe-specific spaces in communities were identified as most appropriate for program implementation. Culturally appropriate social marketing approaches with strong focus on family, heritage and tribal community were identified as key in diabetes prevention along with exploration of the potential role of elders and tribal leaders.

No study of the challenges and best strategies for providing nutrition education for Alaska Native people has been published. For this thesis, nutrition educators were interviewed to understand their perceptions of the challenges to and most effective strategies for improving the diet quality and health of Alaska Native people through nutrition education. The specific questions put to nutrition educators were: 1) What are the challenges their clients face to improving diet quality? 2) What are the challenges they face to improving their clients' diet quality?, and 3) What approaches or strategies do they recommend for improving their clients' diet quality? By examining the answers to these questions this study seeks to inform future nutrition education program development for indigenous populations through understanding the perspectives of nutrition educators serving a geographically, economically, and culturally diverse indigenous population.

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Chapter 2

Qualitative Analysis of In-Depth Interviews with Nutrition Educators Identifies Challenges and Strategies for Serving Alaska Native Clients¹

2.1 Abstract

Objective: To document challenges and facilitators faced by nutrition educators serving Alaska Native clients.

Participants: Alaskan nutrition educators (n=20) in various settings, serving Alaska Natives.

Analysis: Transcripts were analyzed using qualitative methods to identify emergent themes.

Results: Educators perceived challenges regarding subsistence foods and lifestyles, the need for cultural competence, and the benefits of employing local knowledge. Specifically, access to subsistence foods and lack of client knowledge regarding nutritional value, procurement, and processing of subsistence foods were identified as challenges to improving health. Cultural competence was identified as necessary for overcoming barriers associated with language, psychosocial issues, and client responsiveness. Working with a local contact/mentor emerged as a source of information and means for increasing access to community members.

Conclusions and Implications: Nutrition education addressing the context of subsistence foods and lifestyles, which is committed to familiarity and cultural sensitivity

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to clients, and seeks local input to guide programs and access audiences is an important means of improving effectiveness of nutrition education programs for Alaska Native people.

2.2 Introduction

Similar to other indigenous groups ^{1,2}, Alaska Native people experience disproportionate occurrence of chronic health problems associated with poor nutrition and lifestyle ³⁻⁹. Health disparities may be addressed through nutrition education ¹⁰, but, due to unique cultural and socio-demographic factors, it is unclear whether and to what extent nutrition education programs effectively improve diets and encourage more active lifestyles among Alaska Natives and other indigenous people. Alaska's Native people inhabit a variety of environments, from the temperate rainforests of the Southeast to the arctic tundra of Alaska's North Slope; live in communities ranging from small and isolated rural villages to urban centers; experience different levels of services and amenities; and have recently experienced rapid cultural and economic change resulting in changing dietary patterns. Nutrition educators serving Alaskan Native people are not only faced with helping their clients overcome commonly recognized barriers to healthy nutrition, such as, accessing healthy foods, cost of foods, nutrition knowledge, etc., but also addressing these challenges from the unique environmental, cultural, and historical circumstances from which they arise ¹¹.

Formative assessments examining contexts, specific behaviors and influences on behaviors, and resources available to nutrition educators have been performed for nutrition education programs serving other indigenous peoples ¹²⁻¹⁵, but to date, similar research examining nutrition education programs for Alaska Native people is limited. By examining emergent themes in qualitative data from in-depth interviews with nutrition educators serving Alaskan Native clients, this study aimed to better identify and understand challenges and facilitators to improving diet and educators' preferred strategies for serving a geographically, economically, and culturally diverse indigenous population.

2.3 Methods

2.3.1 Participants and Recruitment

A subset of interviews from a larger study^{16,17}, conducted with Alaskan nutrition educators between January and March of 2014, was used for this study. Recruitment was conducted in a purposive manner; an internet search was performed to identify professional health practitioners and educators employed in the delivery of nutrition education along with their contact information. Specifically, a state-wide list of dietitians, diabetes educators, cooperative extension personnel, Women, Infants, and Children (WIC) program educators, public health practitioners, and clinicians was assembled. Potential interviewees were contacted by phone or email and asked to participate in an in-depth telephone interview. Snowball sampling was also employed as each contactee was asked to recommend other qualified individuals who might be willing to be interviewed. Willing participants were then scheduled for subsequent interviews. For inclusion in this study, we selected only interviews with educators serving primarily Alaska Native clients.

All procedures, informed consent forms, and interview questions had previously been submitted for approval to the Institutional Review Board (IRB# 519434-8) at the University of Alaska, Fairbanks in accordance with required protocols for conducting research involving human subjects.

2.3.2 Instrument Development

This study follows from examination of three questions asked regarding nutrition educators' perception of: 1) their clients' challenges to improving diet quality, 2) the educators' challenges to helping clients' improve diet quality, and 3) the educators' recommended strategies for improving clients' diet quality (Table 1). Interviews were

open ended and length of each depended on participant responses. All interview questions were checked for internal validity by a test run with a professional nutrition educator. Questions were then reviewed and amended to improve clarity and flow of the interviews.

Table 1: Questions Asked of Nutrition Educators Interviewed

What would you tell a nutrition educator, new to Alaska, are the challenges your clients face to improving diet quality?

- Time?
- Knowledge?
- Cost?
- Food access?

What would you tell a nutrition educator, new to Alaska, are the challenges you face to improving diet quality?

- What about challenges specific to curriculum?
- What about challenges specific to delivery method? Which is best?
- What about challenges specific to food access issues in Alaska?

Thinking about your audience, what kind of an approach or strategies would you recommend to a nutrition educator, new to Alaska, to improve diet quality?

- Delivery method?
 - Topics?
 - Curriculum?
-

2.3.3 Interview Procedures

Three trained interviewers conducted the telephone interviews with nutrition educators from around the State of Alaska. Interviewers recorded each interview and made detailed notes of responses. When all interviews were complete, the compiled notes were read by the first author to identify nutrition educators delivering nutrition education to primarily Alaska Native clients. These interviewees were identified and recordings of those interviews were sent electronically to a transcription service.

2.3.4 Analysis

De-identified transcripts were loaded into qualitative data management package, ATLAS.Ti,(GmbH, Berlin, Version 7, 2014) for analysis. Each transcript was read to gain familiarity with the entire body of interview responses. Utilizing the method of inductive content analysis¹⁸, elements of grounded theory,¹⁹ and constant comparative method²⁰ open coding was performed on the entire text of each interview transcript to identify emergent themes. In order to ensure validity of themes, a nutrition graduate student with experience in qualitative data collection and analysis was provided with the code book and asked to independently code the relevant portions of a subset (5) of the interview transcripts; these were then compared to the original coded texts. Validity of codes and emergent themes were discussed to reconcile differences between coders. The agreed upon coding scheme and themes were then applied to the rest of the interview transcripts. Representative quotes from the text were identified for inclusion in the manuscript. (See Appendix for detailed description of coding/theme identification procedure.)

2.4 Results

An internet search of Alaskan nutrition educators identified 70 potential interviewees. Attempts to contact these individuals, by either phone or email, resulted in 48 educators willing to be interviewed. Duration of interviews was, on average, 30 minutes. On the basis of participant responses, a subset of 20 educators serving primarily Alaska Native clients was identified for inclusion in this study. Participants were employed in the following positions: Behavioral Health Aide ($n=1$), Public Health Nurse ($n=1$), Registered Nurse ($n=6$), Certified Diabetes Educator ($n=2$), Diabetes

Program Coordinator (*n*=2), Community Health Aide (*n*=1), Cooperative Extension (*n*=1), WIC (*n*=1), Registered Dietician (*n*=5).

2.4.1 Client Challenges

Table 2 displays themes and emergent subthemes identified by analysis of nutrition educators' responses to interview questions.

Table 2: Themes and Emergent Subthemes Identified in Interview Responses

Client Challenges

- Access
 - Market foods, subsistence foods, cost assoc. w/subsistence lifestyle
- Time
 - Shopping, Subsistence harvest and processing, Young women's family responsibilities
- Unsupportive Environments
 - Prevalence of junk food, inactivity, social pressure, overconsumption
- Knowledge
 - General nutrition, lack of knowledge and misperceptions about subsistence foods
- Generational Differences
 - Access, subsistence knowledge

Educator Challenges

- Geographical Barriers
- Being Sensitive to Clients' Perceptions and Circumstances
 - Difference between village and town, impossibility of eating healthy in village, health of native diets, psychosocial factors
- Necessary Knowledge and Competencies
 - Communication, cultural sensitivity, knowledge of subsistence foods

Educators' Recommended Strategies

- Finding Local Mentors
 - Emphasize Subsistence
 - Cultural Familiarity
-

2.4.1.1 Access

Educators discussed access to healthy market foods as influenced by characteristics of rural village stores; the remote locations of many village stores

impacting the cost of provisioning such stores resulting in scarcity, short shelf-life and low quality of fresh foods, prevalence of processed shelf-stable foods, and high costs.

... good food is harder to come by especially with the fresh vegetables. Once they come in they're pretty wilted and more expensive than they are here.

The cost of a gallon of milk of five bucks or more or maybe eight in the villages and that's an interesting subject by itself.

The villages don't even have a village store and the things that are available in the store are just all poor choices. I was in a village last week and we went to the store and there was maybe two nutritious things and that was just a box of pears, fresh pears that were rotting.

Interviewees described access to local/subsistence foods as constrained by the increasing distances, due to environmental change, hunters are required to travel to harvest game. The high cost of equipment, such as boats, fuel, and ammunition necessary for harvest of subsistence resources was also identified as a barrier participation in subsistence lifestyles.

Subsistence used to be you'd walk outside your village a hundred yards and you could shoot a moose and you can't do that anymore. I mean the subsistence foods are still there, but it's not like it was.

It may also be the high cost of fuel which people would need to go out and harvest in different areas.

2.4.1.2 Time

Challenges associated with time identified by educators included time required to procure healthy market foods in rural areas (shopping and monitoring availability), traveling long distances to reach food sources (both market and subsistence), and harvesting and processing of subsistence foods. Educators identified young women living in villages as particularly impacted by time constraints as responsibility for many of the above tasks fall to them, along with the responsibilities of caring for children, household maintenance under difficult rural conditions (lack of plumbing), care of elder relatives, and providing income through employment in wage labor.

Preparing it [subsistence foods] for storage or for the future is very time consuming.

If you want to eat healthy here, you have to spend a lot of time shopping, thinking about the foods that you're eating and going to eat.

Time, what's hard is in the villages ... a lot of the women hold the jobs in the family and also they're the ones who prepare the food ... So a lot of the moms I worked with had a fulltime job... They're raising their young children and then they're also taking care of maybe their grandparents or parents and then don't even get me started with how hard their life is, with the fact they don't have a flushing toilet and they're having to drag honey buckets places. So, tons of problems with not having enough time to get everything done that needs to get done.

2.4.1.3 Unsupportive Environments

Educators identified changing dietary habits in an environment unsupportive of healthy nutrition as a challenge for their clients. The unsupportive environment was characterized by the pervasiveness and consumption of sugar sweetened beverages (particularly pop/soda); the pervasiveness in stores of processed and convenience foods; and a tendency to consume convenience foods while engaging in sedentary forms of entertainment. These challenges were exacerbated by family and social pressures reinforcing overconsumption and the replacement of active traditional/subsistence lifestyles with more sedentary activities and forms of entertainment resulting in inactivity.

It was all packaged crackers and chips and an entire aisle that catered to sugar sweetened beverages. The frozen section was really small. It was just Hot Pockets and pizza.

...then it comes to the food basically, the excess of junk food that is so easily available. Often in the family even if one person was to change it, if there is no support from the family, it's much harder.

So it's a lot easier to chop wood and haul it in your snow machine and yes that still takes some time but then you've got a lot of extra time to sit around and have the flat screen TV with the cable and I know from my personal experience that if I'm sitting around not doing anything, then I suddenly feel hungry and I want a snack and then people come and visit and that type of thing tends to focus around food. Like hey, here's a snack or whatever. Here's a soda.

The whole concept of family meals, that's sort of getting lost. People really sit down and eat together as much as they used to or if they do, it's in front of the TV and there's a constant barrage of commercials...

2.4.1.4 Knowledge

Educators identified a lack of knowledge and misperceptions regarding the harvesting, preparation, and preservation and storage of subsistence and traditional foods.

... it's not just the loss of the way of gathering, hunting traditional foods. I think it's the loss of value of why do we need to do this and then as well as the I have no idea what to do with it once I get it or making any meal from scratch.

Like I've had hunters tell me that they've offered food to families that were needy but then the families turned it down because they didn't know how to either put it up or didn't know how to prepare it. So there were resources there, but they needed more education about how to utilize it.

...right now we've had a shortage of walrus in the villages ... and people have donated other food to the community but people haven't know how to prepare all those foods... There's been fish that's been sent out... There's been bison that was sent out. So friends of mine who work in the fields have been fielding questions about how do you prepare bison.

Also identified were issues of misperception regarding the nutritional values of some subsistence foods; educators explained that clients often didn't know that locally harvested berries, greens, and beech greens qualified as fruits and vegetables.

A lot of people just won't make the leap between okay fruits are healthy, salmon berries, huckleberries and blueberries are a fruit.

... realizing that the traditional foods do indeed play a huge role and they count towards these things and oftentimes people want to stop when you talk about vegetables, well the words get in the way. Now those beach greens count.

2.4.1.5 Generational Differences

There was recognition that some of the challenges faced by Alaska Native clients are experienced differently by people of different ages. Elders were identified as experiencing challenges related to food access, specifically, not being able to harvest traditional subsistence foods for themselves.

The problem is the folks are older and can't hunt. So as the communities age, they have less and less access to subsistence foods because they don't have anybody that can go harvest them.

...but you have elders that can't go out hunting anymore or they're just not strong enough to do it anymore. Maybe they have family that helps them or maybe they don't or they don't have the resources... you can't just fish off the dock.

In addition, younger people were described as lacking knowledge about cooking and food preparation and having less knowledge about harvest and use of subsistence foods than older people and elders.

...the younger people lack the knowledge of knowing what those subsistence foods are, like using fireweed for asparagus, those kinds of things.

Elders, on the other hand, were described as knowledgeable about cooking in general and about processing, preservation, and preparation of subsistence foods.

Of course with the traditional foods, cultural foods, or subsistence, I know the older generation would have grown up with more of the subsistence foods and I think people still try to go out hunting, fishing and all that.

2.4.2 Educator Challenges

This study identified three major themes related to the challenges educators face to improving their clients' diet quality. These themes were: geographical extent and accessibility (remote, off road system) of the areas they serve, confronting clients' perceptions and being sensitive to their circumstances, and cultivating knowledge or competencies necessary for working effectively with Alaska Native clients.

2.4.2.1 Geographical Barriers

Educators described being challenged by geographical extent and accessibility (remote, off road system) of the areas they serve.

Bethel's off the road system and so are all the villages. So in order to actually get the people we have to take single engine airplanes and land on gravel strips ... I mean it's just getting to the people that we are trying to serve is a huge challenge.

...they had those 48 villages. So in order to reach that population you had to fly out there. In that respect we needed the resources in order to get out to see our clients...

2.4.2.2 Being Sensitive to Clients' Perceptions and Circumstances

Educators often live outside the communities they serve, have only recently moved to or become acquainted with those communities and their specific circumstances, and are often, in one sense or another, perceived as outsiders by their clients.

Educators described clients' perceptions that nutrition educators do not appreciate the difficulties associated with living in villages as opposed to larger towns and cities.

I'd say get used to or just be aware that there's a big difference between living in the village and living in the cities and that barrier will always be presented to you.

Interviewees also described clients' perception that it is impossible to eat healthy in villages, due either to expense or lack of access to healthy foods, as impacting their receptiveness to nutrition education.

It's difficult for the person who we're trying to teach the diet to because they got their minds set that they can't afford to get the kind of foods that we're asking them to eat because it costs more and sometimes they're set in their ways and this is what they eat and this is all they're going to eat and they're not going to change.

I would say definitely the perception that you can't eat healthy in the village. There's definitely that barrier that no we just can't afford it, everything cost so much.

Another challenge educators described was overcoming clients' perceptions that their diets are healthy because they are "native" diets and therefore naturally healthy.

...there's a big pullback from patients in the sense that we've been eating this food for a long, long, long time and you're going to tell us we don't know what we're doing or we don't know how to do things and so even if you're not trying to do that, even if you're just trying to give information, there's still a lot of oh I eat a traditional diet. I hear that every day from my patients.

...telling somebody about how to eat when they've been eating healthy for thousands of years and so on and so forth and they eat a native diet and all that stuff and then but why are you obese and why you do have high blood pressure and why do you have that if you're eating healthy.

Educators also described the necessity of understanding that, due to psychosocial challenges prevalent in many Alaska Native communities, clients may not recognize nutrition as a priority.

... in the population that we serve, there's a lot of social challenges where sometimes (nutrition) is the last thing on their mind. They've got so many traumas in their lives.

...it [client receptivity to nutrition education] could have nothing to do with what you have to say. It could have to do with the fact that they just lost a brother or a father or there's been two suicides in the village and this is just a bad time for you to even discuss making any changes with them.

2.4.2.3 Necessary Knowledge and Competencies

Educators identified a need to cultivate various cultural competencies; for example, being aware of, and sensitive to, differences and nuances in communication styles between themselves and their clients. Interviewees described needing to learn to

listen to their clients carefully so that they recognize when something important is being said and be aware that clients often understate concerns.

...and the other thing is listening really carefully and hearing what's going on because in the culture up here, often it isn't with every person, but it's just kind of a general principle that often people will say kind of what's going on but they'll just kind of say it in a conversation, it will just kind of be dropped in there. If you're not paying close attention, you might not even hear it.

...He hadn't even heard it and to me the mom had just revealed some big issue that was really important and needed addressing but because she didn't grab a hold of his ears and make him hear it, he didn't hear it. I was already used to listening to families for things like that and so to me she was saying it loud and clear.

Educators also identified as necessary knowledge about the food resources available to Alaska Native people. This includes not only knowledge about market foods and their availability in Alaska, but also knowledge about traditional foods and barriers to their use, cultural significance of those foods, and other practices related to their harvest and use, such as their sharing throughout communities and between relatives.

...with our Native participants, the first thing they ask is how does our Native food measure up to all of this that you're telling us about

I think the biggest curriculum challenge is the fact that it is a difference in the culture particularly with us being a Native culture. The eating patterns are different. The foods are different. The curriculum talks about fresh produce. Wait a minute... fresh produce is really hard to get in the Native communities. So there's that big piece, we're always tweaking that, to tell someone to eat lettuce

when that's never been a part of their diet and that's so much of what the education is based on is what we consider good nutrition that people have access to in the lower 48...

2.4.3 Educators' Recommended Strategies

2.4.3.1 Finding Local Mentors

Educators recommended finding local individuals who could suggest approaches for working in communities or provide guidance.

I would try to find a partner in the community who wants to help me present the information. I think that would be one way to maybe look at it is seeing if there's some other person who works in a similar field, ... I could partner with who might know more about the community I'm traveling to.

...I find that it works a lot better if I can be in a partnership with somebody who maybe already has had a relationship in the community because for me ... it would be nice to partner with somebody who knows more people in the community.

I've always contacted people in the village and talked to them about how I should approach things. ... and followed their advice on how to handle it .Even when I disagreed with them, I followed their advice and they turned out to be right and I was wrong.

2.4.3.2 Emphasize Subsistence

Educators recognized subsistence lifestyles and local foods as forming important components of their Alaska Native clients' diet quality and health.

...a lot of people still subsist for food added to their other food and that the healthiest food on the planet is the traditional foods.

... you have to be aware of their Native foods,... they see these charts, five a day, plate, and not too much meat is good and how about our seal meat, how about our moose meat...

I would say folks need to go back to their traditional way of eating. Just hunting, gathering and fishing.

2.4.3.3 Cultural Familiarity

Related to educators' emphasis on subsistence lifestyles and foods, educators also identified familiarity with their clients' culture (and language) as an important means of connecting with clients.

I'm learning the language that is prevalent here and also to learn the names of the various foods, which by itself I found often I worked in other cultures before, helps to facilitate a level of comfort in the sense that okay, yes, this educator is interested in our culture as well...

I guess because I've worked with the Native population so much it would be really doing your background on what the need of the culture is, what the Native diet is, get a clear understanding of that and trying to promote that as much as possible.

2.5 Discussion

The present qualitative investigation aimed to explore the experiences of nutrition educators serving Alaska Native clients in order to identify and better understand

common challenges to improving diets and their preferred strategies for serving a geographically, economically, and culturally diverse indigenous population. Major findings include: (1) the importance of working within the subsistence food/lifestyle context for Alaskan nutrition educators, (2) the need for cultural competence and sensitivity for nutrition educators serving Alaska Native clients, and (3) the benefit of local mentors who can provide educators with insight and information to facilitate the ability to serve their Alaska Native clients.

Qualitative studies performed with Navajo families and educators ²¹, Aboriginal Australian attendees of diabetes cooking courses ²², and Chickasaw Nation women to inform an Oklahoma SNAP-Ed program ¹² have identified a variety of strategies including direct individual/group approaches and community level public health approaches which are culturally appropriate and concordant with the preferences of the populations they serve.

Findings of the present study found parallels with themes of knowledge of healthful eating, time related pressures, and cultural relevance of educational strategies which emerged in the study performed with Navajo. Parallels also exist between the theme of finding local mentors and cultural sensitivity which emerged in the present study and the Chickasaw Nation women's preference for education promoted by elders and tribal leaders and the focus on heritage and tribal community. Similar themes concerning psychosocial factors, generational food preferences, and high food prices identified in the Australian case also emerged in the present study.

Unique to the present study is the emergence of the importance of traditional foods and subsistence lifestyles. In each of the major themes identified (Client Challenges, Educator Challenges, Educators' Recommended Strategies) and in a majority of the

emergent themes, educators the context of subsistence foods and lifestyles emerged as a priority to educators working to improve the health and well-being of their Alaska Native clients.

Indigenous food systems play an important role in maintaining individual and community health for groups experiencing nutrition transitions ^{11,23-25}. Food and food behaviors play diverse roles in human health, transcending the physiological aspects of diet ^{26,27 28,29 30}. And, subsistence foods and lifestyles are an important component of well-being and health of Alaska Native people ^{24,31-34}. The current findings suggest that effective nutrition education aimed at Alaska Native clients requires educators to address barriers to subsistence foods and lifestyles by emphasizing their nutritional and health benefits while providing instruction about their methods of harvest, preparation, incorporation into meals alongside market foods, and storage. Further, a need emerged for development of materials and training for educators sufficient to provide this education.

Educators identified the need for cultural competence and sensitivity to engage Alaska Native clients. Educators described the necessity to competently provide education within the context of clients' culture, communication styles (including language), and current social circumstances (e.g., privacy concerns, community well-being, differences between age groups). Defined variously ³⁵, cultural competence on behalf of educators is seen as potentially increasing the responsiveness, appropriateness, and effectiveness of education offered ^{4,36}. While educators in this study discussed maintaining or cultivating attitudes of openness and respect to clients' needs and preferences, the importance of listening to clients, and studying client culture and language, much of educators' conversation around cultural competence and sensitivity focused on the importance of familiarity with clients and getting to know

clients; aspects of the educator/client relationship which require time and extended association to come to fruition. This finding suggests that nutrition educators serving Alaska Native clients would benefit from training and materials developed to increase cultural competence, but that suitability of prospective educators should also be considered with regards to their willingness to commit to the time requirements necessary to cultivate in-depth familiarity and knowledge of their clients.

Educators in the present study also identified the value of having local contacts and recommended having a local mentor, possibly working in the same or related field, who is more familiar with the community, its individuals, and community needs and can provide the educator with information, advice, and access to larger numbers of community members.

A possible limitation of this study is that emergent themes and subthemes identified by analysis of interview responses reflect only the views of the 20 nutrition educators chosen for inclusion in the current analysis. However, 20 educators represents a large sample of Alaskan nutrition educators.

2.5.1 Implications for Research and Practice

The above findings indicate a need for a workforce of nutrition educators capable of delivering to their Alaska Native clients actionable nutrition education that (1) encourages and facilitates the use of local subsistence foods, (2) is both sensitive to the unique circumstances of Alaska Native people participating in nutrition education programs and committed to developing the necessary familiarity with their clients and the indigenous context, and is (3) engaged with local individuals to better access resources and understand their views and preferences for content and delivery. Creation of such a work force could be encouraged by creating credentialed training programs for

prospective nutrition educators similar to peer nutrition education programs implemented elsewhere ³⁷ and to the Community Health Aide Program in Alaska. Local views and preferences for content and delivery are important considerations for programs seeking to serve Alaska Native program participants.

The findings of this study could be enhanced, and program development further informed by investigations, similar to the present study, of barriers and facilitators to healthy diets and lifestyles as they are perceived by Alaska Native people participating in nutrition education programs.

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Chapter 3

Conclusion

Nutrition educators perceive a variety of economic, environmental, social, and cultural factors to be challenges or facilitators to improving their clients' diets through effective nutrition education. This thesis highlights the challenges faced and approaches recommended by Alaskan nutrition educators serving Alaska Native people. These are valuable perspectives given Alaska's unique environmental and cultural circumstances and the disproportionately high levels of health disparities experienced by Alaska Native people.

It is important for nutrition educators serving Alaska Native audiences to consider the subsistence food/lifestyle context as of primary importance for improving the diets of their Alaska Native clients. Alaska nutrition educators describe a need for familiarity with Alaska Native people, including their cultures and languages, and sensitivity to indigenous peoples' concerns as essential for effectively serving their clients. Educators interviewed for this study recommended engagement with knowledgeable local individuals to gain access to useful local resources, increase receptivity of audiences, and best understand the nutrition education needs of communities they serve.

Creation of a credentialed training program for prospective nutrition educators could facilitate implementation of these recommendations by nutrition education programs serving Alaska Native people. Quality of such a program would be enhanced by input from Alaska Native communities and program participants with regards to local preferences, content, and subsistence knowledge. Completion of a credentialed Alaskan nutrition education program would also ensure the level of commitment necessary to

achieve the recommended levels of familiarity with Alaska Native cultures, languages, and concerns on the part of prospective nutrition educators.

Appendix

Note on Coding and Theme Identification

Each transcribed interview text was de-identified and read to gain familiarity with the entire body of interview responses. Utilizing the method of inductive content analysis ¹, elements of grounded theory ², and the constant comparative method ³ open coding was performed on the entire text of each interview transcript, excluding the second interview question which dealt with program evaluation. Initial coding was performed using qualitative data management software, ATLAS.Ti . All initial codes were derived inductively from the content of the interviews. The unit of analysis was the utterance, which could be considered a word, part of a sentence, a complete sentence, or an entire statement. As transcripts were read, each utterance was described with as many codes as were required to capture all aspects of meaning. Coding progressed using the constant comparative method, an iterative process in which each successive passage of text was coded with reference and in relation to each previous coded utterance. By this means, codes were either reduced by combining codes which described utterances with similar meaning, or expanded by creating additional codes to relate meaning not sufficiently captured by previous codes. Codes were codified in a codebook containing 84 entries. Each code was listed alphabetically along with a brief definition, inclusion and exclusion criteria (when appropriate) for application, and one or more examples of the codes' application quoted from passages of the transcripts.

Using ATLAS.Ti's Network Manager feature, eleven categories were created, each roughly corresponding to one of the interview questions and its associated prompts asked of interviewees. As utterances were coded, each was assigned, along with its code, to a code family. In this way, it was possible to keep track of the coded utterances

made by interviewees in response to each question asked and compare application of coded responses across all questions asked. Similar or related codes were grouped into possible higher level categories facilitating preliminary theme identification.

Once texts of all transcripts were coded, it was decided that interviewees' responses to three interview questions would form the subject of inquiry for this study (see manuscript). Coded passages from the three corresponding code families were examined for similarity of content and grouped together into emergent themes and subthemes.

In order to ensure validity of themes, a nutrition graduate student with experience in qualitative data collection and analysis was provided with the code book and asked to independently code the relevant portions of a subset (5) of the interview transcripts; these were then compared to the original coded texts. Validity of codes and emergent themes were discussed to reconcile differences between coders. The agreed upon coding scheme and themes were then applied to the rest of the interview transcripts. Representative quotes from the text were identified for inclusion in the manuscript.

Two hundred and fifty-five utterances were coded using fifty-four codes, the above described analysis of which resulted in the identification of 13 major themes and 29 associated subthemes. The decision was made to limit inclusion in the manuscript to only themes and subthemes of unique relevance to nutrition education for Alaska Native people or other indigenous people and exclude those generally applicable to all nutrition education programs. The remaining 11 major themes and 21 subthemes (Table 2) form the subject of Chapter 2 of this thesis.

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