

“It’s a Social Thing”: Sociocultural Experiences with Nutrition and Exercise in Anchorage, Alaska

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Abstract. Cross-cultural research shows marked variation in health across the world’s senior populations. The social and cultural environment contributes to complex negotiations of food and physical activity patterns; however, little is known about social and cultural influences on diet and activity patterns for older adults in the urban Circumpolar North. Utilizing a socioecological framework, this project investigates social determinants of well-being in older adulthood in Anchorage, Alaska. The purpose of this exploratory qualitative study was to identify socio-cultural influences on diet and activity patterns for seniors in Anchorage to inform the design of a larger quantitative research project. This study asked 15 seniors in Anchorage about socio-cultural factors that influence their diet and physical activity. Six major themes were identified: the media, friends and peers, family influences, social opportunities, ethnicity and subsistence practices, and weight loss/body weight concerns. This research suggests that reaching older adults with diverse needs through a variety of channels, including the media, social networks, and social events, can help alleviate barriers to healthy lifestyle patterns. These results indicate a need for low-cost, accessible, culturally responsive programs that maintain relationships with family members and make connections between seniors in order to improve diet and physical activity practices.

In most countries, including the U.S., the proportion of people over 60 years of age is growing faster than any other age group (WHO 2012). Alaska’s senior population grew by 79% between 2000 and 2013 and currently makes up 9.2% of the state’s population. The number of Alaskans over the age of 70 is expected to grow by almost 60% in the next seven years (Alaska Department of Labor and Workforce Development, 2014), suggesting that the

wave of adults reaching a senior age in Anchorage may have unique needs that the public health community may not be prepared to handle.

The social and cultural (or “sociocultural”) influences on older adults, such as those derived from cultural identity, family, peers, education, and the media contribute to complex negotiations of food and physical activity patterns. For example, food is often a marker of ethnicity, where food

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at social events is shared as an expression of individual, family, and group identity (Lowe 2010). Also, possessing social networks for food-sharing is an important nutritional strategy, as these social contacts tend to become a major source of food provisioning in older adulthood (Lee 2002). Although researchers understand much about the biological processes of aging, less is known about the sociocultural factors that contribute to cultural variation in aging (Ice 2005). There is a rich body of research on Alaska Native nutritional patterns in rural areas (see, for example, Ballew et al. 2006; Bersamin et al. 2006; Nobmann et al. 1992; Wolfe and Walker 1987); however, studies of aging among a multiethnic sample in the urban Subarctic are largely lacking in the literature.

The experience of aging is markedly different across the world's populations because aging is a biological process rooted in sociocultural context (Sokolovsky 2008). Specifically, cultural patterns and social relationships help shape dietary and activity patterns, which play a key role in metabolic rates and the process of aging (Poehlman 1996). This qualitative project uncovers some of the sociocultural factors that influence diet and physical activity patterns among a multicultural sample of urban seniors in the subarctic environment of Anchorage, Alaska.

The interviews discussed in this manuscript led to the identification of six major themes: the media, friends and peers, family influences, social opportunities, ethnicity and subsistence practices, and weight loss/body weight concerns. This initial description of the sociocultural influences on diet and activity patterns suggests in order to reach older adults with diverse needs and alleviate their barriers to healthy eating and physical activity practices, a variety of channels should be used including the media, social networks, and social events. Low-cost, accessible, culturally responsive programs that support relationships with family members and help to form new connections between older adults may be instrumental for improving diet and physical activity practices.

Aging in the Urban Subarctic

Compared to rural areas, cities often have greater infrastructures, contributing to increased availability to amenities such as grocery stores and recreation centers. However, the urban environment poses its own challenges for older adults. The environment can have a significant impact on older adults' ability to leave their homes and navigate their communities (Rowles et al. 2016), which in turn affects activity levels and dietary quality (Tucker and Gilliland 2007). Some older adults in the Circumpolar North may only feel they can safely leave their homes for grocery shopping or

physical activity when ideal weather conditions permit. Urban residents report low levels of physical activity, a risk factor for cardiovascular disease and mortality (Popkin 1999), due in part to the built environment (Nykiyoruk et al. 2013). Large segments of Anchorage do not have sidewalks, and those neighborhoods that do may find their streets and sidewalks covered in ice and snow much of the year, further reducing physical activity (Witham et al. 2014). Also in the Subarctic, food prices can be high, especially for items that are not locally or seasonally available, resulting in complications of food access for older adults (Green et al. 2008). Urban residents frequently have suboptimal diets that fail to meet the USDA recommended levels of energy, fiber and many micronutrients; and exceed recommended amounts for fats, sugar, and sodium (Deierlein et al. 2014).

While physical environmental and economic challenges in Anchorage certainly exist, urban health researchers agree that the social environment is one of the most important health determinants for the healthy aging of older adults (Phelan et al. 2004). Harriet Kuhnlein, noted for her nutritional anthropological work among circumpolar populations, argues that as northern peoples are increasingly moving to urban areas, many foods and processing techniques are being lost, creating concern over the retention of indigenous knowledge and foodways (Kuhnlein and Receveur 1996). She explains that the pathways from culture to dietary intake are influenced by food availability, cultural preference, affordability, and the media, as well as individual preferences and biological needs (Kuhnlein 2007; Kuhnlein et al. 2009). However, little is known about the sociocultural environmental influences on senior diet and physical activity in the urban Subarctic.

This qualitative study identifies such influences on the social and cultural lives of older, urban adults, through interviews with 15 seniors in Anchorage, Alaska. These qualitative results were used to design a larger quantitative project assessing the strength of the sociocultural influences on diet, activity, and nutritional status outcomes among a larger sample of Anchorage seniors. The qualitative results presented here can also help other researchers understand how sociocultural influences on seniors' food and activity patterns may contribute or hinder efforts at maintaining well-being throughout the aging experience.

Theoretical Framework

We integrate grounded theory perspectives with a socioecological model to elucidate the role of the social determinants of nutritional status among seniors in Anchorage, Alaska. The study began with a grounded theory framework that allowed a

theoretical structure to evolve during research as data was gathered and analyzed, rather than fitting the data into a preconceived theoretical model (Glaser and Strauss 1967). Grounded theory is best considered a generalized methodology that allows researchers to think about and conceptualize the data in terms of patterns of action and interactions (Strauss and Corbin 1994).

Although the interview questions were informed by nutritional anthropological and gerontological literature, the questions were not written utilizing a specific theoretical model. However, it became clear during the interview analysis that participants framed much of their dietary and physical activity patterns within the socioecological model of health behavior (Stokols 1996). The socioecological model has been especially useful for identifying the interactions between social and physical environmental factors on nutrition, physical activity, and aging, and the ability of individuals to adapt to these influences (McNaughton et al. 2012). Although the physical environment was not a main focus of the study, participants expressed the role of intrapersonal, social, organizational, and environmental factors on their diet and physical activity patterns.

Research Site: Anchorage, Alaska

Anchorage is the largest city in Alaska, where approximately 401,500 people reside as of 2017 (Alaska Department of Labor and Workforce Development 2018). Anchorage is now one of the most diverse cities in the nation: the Mountain View neighborhood contains three of the top ten most diverse census tracts in the country (Basu 2016). Because of the remote location of Alaska to the rest of the contiguous United States, coupled with the subarctic environment, the cost of living in Alaska is one of the highest in the country (Fried 2017).

Rising prices of gasoline, medical care, transportation, and housing in Alaska are largely determined by national or international trends since these goods and services often come from outside of Alaska (Fried 2017). Food prices can be high, especially for items that are not locally or seasonally available, resulting in complications of food access for older adults on limited incomes. Additionally, energy costs are unpredictable, and Alaska has the most expensive healthcare system in the nation. Dental exams are 44% more expensive, and physician’s exams are 61% more expensive in Anchorage than the national average (Fried 2017). Since many seniors are likely to require expensive medical care in their lives (Stanton 2006), this creates a situation of competing priorities where funds for groceries might be quickly depleted (Lee 2013). Seniors might be faced with a dilemma between spending money on nutrition,

staying warm in the winter, and avoiding homelessness (AARP 2017).

Anchorage is separated from the nearest U.S. state of Washington by 1,400 air miles (2,250 km) or 2,300 road miles (3,700 km), making transportation and shipping a challenging and expensive endeavor. Due to northern location and short growing seasons, most goods must be shipped or flown into the region, increasing food prices by 16–232% of the cost of foods available in the contiguous United States, depending on location and season (Smith et al. 2008). Winter weather and seasonal darkness affect these transportation systems as well as individual physical activity levels, especially for older adults. In fact, unintentional falls and injuries are the leading cause of fatal and nonfatal injuries among older Alaskans (Alaska Department of Health and Social Services 2013). Since much health research in the region focuses on the influence of the economic or physical environment on nutrition, there is a need to investigate the ways social relationships shape diet, physical activity patterns, and nutritional status in urban Alaska (Driscoll et al. 2013).

Methods and Analysis

For nutritional anthropological research, qualitative methods such as semistructured interviews can provide context and clarity to quantitative food frequency and physical activity data (Ice et al. 2011). Qualitative methods are an effective approach to explore the relationships between individuals and their sociocultural environment, revealing how people experience and perceive the way health is shaped by their environment (Belon et al. 2014). Since nutrition and activity practices in the urban Subarctic may differ from much of the rest of the U.S., this open-ended approach was selected to provide insights and understanding what is lacking from the quantitative literature on these issues.

Research permissions and oversight were obtained from the University of Alaska Anchorage. Informed consent was obtained from all research participants by orally reviewing the approved, three-page informed consent document with participants. For these 15 participants, signed copies of the informed consent were obtained, and participants were given a copy to take home with them. Since monetary remuneration demonstrates gratitude and a commitment to ongoing relationships between researchers and participants (Mduleza et al. 2013), all research participants were compensated \$20 for their time.

Recruitment

Howell (BMH) selected 15 individuals for interviews as key informants based on a variety of

personal characteristics, including age, gender, ethnicity, nutritional status, dietary and activity patterns, and social connectivity (Arcury and Quandt 1999). These characteristics varied by participant; for example, we interviewed not only prominent or outspoken individuals but also approached less active members of the community. A variety of key informants were sought based on their social connections, including people who had lots of friends and family as well as those who had few. BMH selected individuals along a continuum of these characteristics so that we could capture the variety of experiences among Anchorage's senior population.

Recruitment of participants was based primarily in two community centers and two senior living complexes in Anchorage. This site-based approach utilized local gatekeepers and staff within these four sites to aid in recruitment from their membership and resident populations through word-of-mouth and local media (fliers) in these sites. These sampling strategies yielded 15 key-informant participants for semistructured interviews (Table 1).

Semistructured Interviews

Through networks and existing relationships at senior living complexes and community centers in Anchorage, BMH conducted semistructured interviews with 15 participants from a list of questions and topics. The gerontological literature suggests that seniors may be influenced by such factors as friends, family, personal tastes, and preferences in their dietary and activity patterns (see, for example, Ewald 2016; Schoenberg 2000; Seeman et al. 2001). The literature on urban residents also suggests that the media plays a significant role in such behaviors (see Pirgon and Aslan 2015; Popkin et al. 2005; Tennant et al. 2015). Lastly, the literature in the Circumpolar North suggests that ethnicity and food availability play a role in diet and activity decisions (see Jarvenpa 2008; Kuhnlein et al. 2009; Loring and Gerlach 2009; Searles 2002). From this literature, BMH created the semistructured-interview guide to frame the conversations. The interviews asked participants about themselves; their friends and family; about their typical diets; meaningful foods; how foods are chosen, purchased, and prepared; typical and favorite activities and exercise; and what influences these diet and activity choices.

Interviews were recorded, transcribed, and coded thematically in NVivo v.9 software (QSR International 2011). The 15 semistructured interview participants consisted of six men and nine women, aged 57–87 years (see Table 1).¹ Participants reported their ethnicity as Euro-American,

African American, Asian, or American Indian/Alaska Native. Only two participants were born in Anchorage, but all had lived in Anchorage for more than ten years. Most participants were retired and lived alone. Four participants were married, and three participants lived with a non-relative roommate.

Data Analysis

Semistructured interviews lasted approximately one hour each. All interviews were audio recorded and transcribed in their entirety and thematically coded using NVivo. Interview transcripts were coded for themes relating to the influences on diet and activity behaviors. Text segments consisted of a sentence or a paragraph that was affixed to a code using inductive analysis, meaning that codes were generated organically from the data. Inductive analysis is used to create new themes from the data that may not have been anticipated if a theoretical model had been used at the outset.

Coding involved a careful analysis of field notes and interview data and affixing low-inference codes to text segments (Card 2015). Low-inference codes are those that are discrete from each other and do not require high levels of value judgments to assign text segments to codes. For example, a code for “vegetable consumption” and a code for “occupation” require a low-level of inference because they are distinct categories that would not often be confused. Inductive open coding was used to identify themes grounded in the data and to create a codebook (Ryan and Bernard 2003).

The analysis also included the use of the constant comparison method, which involved refining low-inference codes into more specific subcodes. As codes were categorized and recategorized, the data were constantly being compared to other codes and text segments, such that the codes and subcodes became refined over time. This method allows researchers to code and analyze the data at the same time: refining concepts, identifying their properties, and exploring their relationships (Taylor and Bogdan 1984).

Using low-inference coding and the constant-comparison method during codebook creation increased the likelihood that the coding process was reliable (LeCompte and Schensul 1999). Reliability of qualitative data coding and codebooks can also be obtained by demonstrating consistency between individual coders, or intercoder reliability (Weber 1990), on a sample of 10% of the interviews (Neuendorf 2002). We cocreated a codebook, refined it three times, and achieved 82% agreement between us, indicating sufficient intercoder reliability (Bernard 2006).

Table 1. Description of Semi-Structured Interview Participants (N=15).

Sex	Age	Pseudonym	Ethnicity	Location of Birth	Years Living in Anchorage	# People in HH†	Occupation
M	65	Harold	African American	Oakland, CA	39	2	retired—former military
M	65	Sergei	Alaska Native	Anchorage, AK	65	2	retired—former realtor
M	67	Kyung	Asian	Seoul, Korea	35	2*	current graphic designer
M	69	Kenjii	Asian	Honolulu, HI	17	1	retired—former construction
M	72	Gilbert	Euro-American	Indianapolis, IN	49	1	retired—former teacher
M	87	Milton	Euro-American	Baltimore, MD	56	1	retired—former electrical engineer
F	65	Fatima	Euro-American	Norman, OK	21	1	retired—former school counselor
F	66	Nolee	Alaska Native	Seward, AK	43	2	current receptionist/instructor
F	57	Lanny	Asian	Apia, Samoa	29	6*	current director of non-profit
F	71	Cornelia	African American	Boston, MA	42	2*	current receptionist
F	72	Edna	Euro-American	Chicago, IL	49	2*	retired—former Walmart greeter
F	75	Henrietta	Alaska Native	northern AK village	18	1	retired—former rural health aide
F	81	Josephine	Euro-American	Trenton, NJ	53	1	retired—former grocer
F	82	Ada	Alaska Native	Anchorage, AK	61	1	retired—former banker
F	82	Blanche	Euro-American	Falls City, WA	12	1	current volunteer

*Indicates participants who live with spouses.

†HH=household

Results

Participants described several of their dietary practices, such as the consumption of local Alaskan foods, trying to eat with other people, favored childhood foods, dieting behaviors, and

“guilty-pleasure” foods consumed. They also discussed a range of sedentary and physical activities performed each week. Lastly, participants detailed some of the social and environmental influences on those behaviors.

Dietary Practices

A majority of participants across all ethnic groups reported in interviews that local Alaskan foods were an important part of their diet, such as seafood, wild game, and berries. All four Alaska Native participants stated that these foods were important to them and their families, along with *agutak*², beach greens, and seaweed, and have various ways to procure such items. Nolee, Sergei, and Henrietta described subsistence practices such as berry picking, fishing (seine netting, fish wheels, and dip netting), and foraging for beach greens. Participants also relied on relatives for hunting and trapping of game animals. The most commonly reported local Alaskan foods for consumption were salmon, halibut, berries, moose, dried fish, and caribou.

The social aspects of eating included food provisioning from family members, systems of exchange to procure regional foods, cooking for spouses or roommates to be sure they are eating well, and planning breakfast or lunch groups so that they can get out of the house. The ways in which respondents prepared shared meals varied considerably. The female participants (who also tended to report more concern for their body weight) reported attempts to prepare vegetable-based meals for themselves and others, although admitted it could be a challenge to coax other seniors into eating these healthy meals. For example, Edna stated that she needed to cook separate meals for her husband, as he was “too skinny” and wanted foods like “pork chops and potatoes” while she made a fruit and vegetable smoothie for herself. Cornelia indicated that her husband requested comfort food, like chicken and dumplings. She adjusted her daily diet accordingly, only eating soups and salads for lunch to counterbalance these high-calorie dinners that she shared with her husband. Few of the male participants said that they cook for others on a regular basis, but those who did suggested that they primarily cooked meat and fish-based meals.

Indeed, several participants indicated that they have had to alter their dietary intake as they have gotten older, as they are no longer able to enjoy some of their favorite childhood foods (“I can’t have those donuts now, Good Lord, oh I do like those old-fashioned donuts, though”). Participants who stated they could no longer consume certain foods did so with some regret. Individuals who were actively dieting or trying to lose weight had all been directed to do so by their doctors, and most indicated that it was a great struggle. Not only were favored foods considered unhealthy and off-limits, but participants said that healthy foods were more expensive and difficult to procure and

prepare. Most respondents said that the high cost of fresh fruits and vegetables in Anchorage was a significant barrier to improving their diet, as these items often go bad quickly “after they get off the barge.” Three participants also did not do their own grocery shopping and felt their diet was at the whim of the housemate who conducted this task for them.

All participants admitted to consuming guilty-pleasure or junk foods. All respondents knew that they should moderate their intake of these foods, but they did so with varying levels of success. Milton was the only one who reported a majority of his diet consisted of such junk foods, stating, “I love sweets. Yeah, I eat a lot of sweets. There’s no doubt about it.” Although Milton admitted to a generally poor diet, he also indicated that this was a constant battle for him, stating,

I’m trying to stay on somewhat of a vegetarian diet [for my diabetes], so I don’t have as many bacon and eggs as I used to. But if you cut out steak and hamburger, it seems like it’s almost impossible not to eat chicken. Then you get sick of it.

Physical Activities

The five participants that engaged in exercise-related activities indicated multiple reasons for doing so: to strengthen bones, brain, and muscle; to increase balance and overall health; and to lose weight. The reported exercise-related activities ranged from walking, bicycling, strength training at the gym, dancing, yoga or tai chi, and sports. Of the five interview participants who reported exercise, only Edna believed she was getting recommended amounts of physical activity. Edna was much more motivated than most to obtain exercise, not only to help with the healing of her knee replacements but because she enjoyed it. Although she had originally been coaxed to attend the community-center fitness classes by a friend, once Edna started she said,

It was the best thing I did, and I started working out. I stopped once for a few weeks, and it was just so uncomfortable to be at home in the winter-time. I get up and want to do something, and there wasn’t anything else here [at home] to do. So once I started going down to the [community] center, you had all that light and all those people and exercise.

Nearly all interview participants also reported typical activities that were not exercise related in nature but still resulted in some physical activity. These activities ranged from walking to complete errands (reported by all but three participants), work/volunteering, gardening and outdoor chores, and light housework (reported

by only two participants). More than half of the interview participants indicated that they do not try to get any exercise. The most common reasons were limited mobility/poor health, inclement weather, and lacking a workout partner. Four seniors utilized wheelchairs or relied heavily on walkers, and many had degenerative conditions or otherwise considered themselves not healthy enough to engage in purposeful exercise. Ada said that her only activity is to go outside several times per day to smoke cigarettes. Exercise was not a priority for her because of her limited lung function and because she thought physical activity was only for people trying to lose weight, which she was not.

Respondents agreed that the long winters in Alaska do not always allow for safe outdoor physical activity. Since joining a fitness facility usually comes with a cost and requires transportation, most participants did not have access to indoor workout facilities. Four participants had free access to a fitness facility in their senior living complex, but only one individual used these facilities. The other respondents indicated that they did not wish to obtain physical activity or that their limited mobility was a barrier to using the facility.

Six participants indicated that it was important to have someone accompany or otherwise support them in their efforts to increase physical activity, although two respondents reported not having such support. Edna said that she enjoys exercising at the senior center because other people make the activities more fun. Milton and Gilbert did not state what would get them to be more active, but when asked about a fitness buddy, they both stated that would probably increase their likelihood of exercising.

Sociocultural Influences on Diet and Activity

In addition to describing their typical diet and activity practices, respondents discussed the factors that influence their behaviors. Six major themes emerged related to the influences on senior nutritional status, diet, and physical activities that mapped closely to the socioecological model. Interview respondents recognized the role of individual factors such as weight loss and body weight concerns, as well as interpersonal influences such as family and friends on diet and activity patterns. Respondents also suggested that their diet and activity patterns were influenced by social factors such as ethnic identity and social opportunities in the community. Lastly, respondents talked about the role of the media on their activity and dietary patterns.

Weight Loss/Body Weight Concerns

As Lanny and others have illustrated previously, seniors are at risk of obesity in Alaska for several reasons. She put it simply, "they tend to just eat and don't exercise." While this may be true for lots of adults across the country, several research participants indicated that they were concerned about excess body weight. Interviewees had various strategies for dealing with these concerns, most of which involved social supports. For Nolee, her roommate, coupled with a weight-loss program, were important drivers for her dietary changes:

I have a roommate, and we both are determined to lose weight. I am in Weight Watchers now, for about a year. I love it. It teaches me to eat the way I need to eat, and it has results. Yeah, I've gone from a size 2X down to an 18."

Edna also found the structure of a weight-loss program to be beneficial to her efforts, which was recommended by her doctor after her knee-replacement surgery,

I didn't eat anything [healthy], just the wrong foods. And I felt terrible with the weight gain and then the knee, my joint, you know my knees hurt. So I lost weight, and so I still have a little bit to go; I lost 15 lbs. and I have ten more to go. And so I stopped eating all that junk. I got more toned [from activity at the community center], the flab is gone. And my legs are not as wobbly anymore; they're a little bit but not as bad, but they're more toned and more shaped than when I was [bigger].

For Edna, the medical necessity of losing weight to speed up her recovery from surgery was an important aspect in the decision to lose excess weight. In fact, for most seniors who were actively improving their diet and activity, the impetus was a doctor's recommendation. When complaining to his physician about his loss of a favored hobby due to poor health, Sergei was told that if he lost at least 100 pounds his ailments would be alleviated and he might be able to pilot small planes again. This was the reason he joined the senior complex's fitness class, together with the social nature of group exercise classes.

Individuals who wanted to lose weight but did not have such social supports were at a significant disadvantage. For example, Kenjii had few friends and no family in Alaska. He stated that changes to his Personal Care Assistant (PCA) staff could dramatically influence his nutritional intake and body weight,

I used to be heavier because my PCA used to come and feed us all the time. Yeah, she used to bring me all kinds of things you know like the, like I told you, the Portuguese sausage and eggs, you know. But I have a different PCA, and you know he don't

bring anything; all I get is what I want. And if it's available. Every once in a while I'll have him make oatmeal for me. Or, what do you call that, the [ramen] noodles, you know.

Kenjii's nutritional status is directly influenced by the cooking skills and compassion of the paid caregivers who shop for his groceries and prepare his meals. Milton is another example of a solitary individual with few social supports to aid in much-needed weight loss. He is also the only participant who reported extremely poor dietary quality, no physical activity, and no efforts to improve those practices. Conversely, Fatima had a strong desire and medical reasons to lose weight, but her only social contacts were her children who tended to request specific foods from her, often ones that she did not eat (e.g., red meat). She said that she felt her family actually derailed her efforts for losing weight and improving health. Even without physician recommendations for weight loss, participants recognized the link between their excess body weight and many of their other ailments. However, most seniors indicated that they required social supports to realize their healthy aging goals.

Family Influences

In Anchorage, family plays a variety of roles in the lives of older adults, not least of which is provisioning of food. Several participants indicated receiving visits from family members who bring meals or groceries to their homes. Milton reported getting frequent food deliveries from his daughter. Although he lived within walking distance of an excellent local grocery store and deli, the items there are expensive, and his mobility was somewhat limited. If left to his own devices, he reported, he would only eat TV dinners, canned chili, cake, and ice cream, despite his diabetes. He says, "My daughter brings me food once in a while. She brought me this Thai food last night; rice and soup, and egg rolls, I think they're called," which often provides him with a healthier, although sporadic, meal.

Although most interviewees reported that family relationships result in provisioning of food to the senior, this is not always the case. Fatima discussed her family very little in the course of her interview. She said that the only role they play in her lifestyle is "wanting to occasionally come over and eat." This did not result in them bringing food to her, but instead asking her to "cook them things like a steak," despite the fact that she does not eat red meat. She said, "I'll make up something like say, you know, this baby bok choy or something with salmon and I'll ask [my son] you know, would he like some of it. But, no." So rather than

let her children adversely influence her dietary intake, she said she prefers to eat alone.

Family ties can be nutritionally and socially important in Anchorage. Kyung, a married man from Korea, has been in the U.S. since 1979. He reports that the social relationship with his wife around food is more important than the nutritional value,

Because I'm not looking for food; I'm looking for my relationships. So I'm thinking about more relationship than food. So [some] food I do by myself, you know, standing [in the] kitchen by myself or eating my own thing . . . but most time with my wife. My wife cook[s] very well.

Interestingly, Kyung was the only individual who reported a positive influence of a spouse on their patterns. The three remaining married research participants report that their spouses have diet and activity patterns that conflict with their own. These three were women who were dieting while their husbands were not. Edna had to cook her husband separate meals because "he's too skinny." Indeed, he was a thin man who preferred to eat fried meat with potatoes, items that Edna indicated she needed to avoid.

Nolee has strong family supports all over the state of Alaska that provide regular food gifts. She receives both shared meals as well as coveted subsistence food items that are difficult to find in Anchorage. Nolee gets "fish, caribou, moose, ptarmigan, you know, a lot of berries: salmonberries, blueberries, raspberries" from her family members who live in outlying areas, "like my cousin's husband works as a foreman in a crab plant and so he can get us crab where we couldn't otherwise afford it." Her family to the northwest gets her seal oil and her family in interior Alaska sends her watermelon berries, in exchange for fresh fruit from the markets in Anchorage that they cannot obtain in rural Alaska. "It's a bartering system," she reports. During data collection in Anchorage BMH also observed that many people sent store-bought fruit and vegetables from Anchorage to their family in more remote Alaskan villages, where prices for these items are astronomical.

Friends and Peers

Edna stated that all of her current friends were people she met at the community center. Her husband drove her to the center every day, dropping her off for several hours. Although her husband chose to spend the day alone, Edna did not let his solitary patterns dictate her own social network. She felt like she might be letting her friends down if she missed a day at the center. She attended at least one group fitness class per day. She usually

had lunch and attended other events, like art or writing classes, as well. Edna explained to me,

It's a social thing. I'm not one to just exercise at home alone. I've done it, but it's not something that you can do on a regular basis. It's not fun. I want to enjoy it. I think exercise is fun, it feels good.

Edna felt a strong sense of camaraderie and accountability to her friends at the community center, and she had a strong desire to exercise and eat with them.

Most of the men interviewed indicated that they do not have many friends to help them get out and be active. Meeting to exercise or attend group fitness classes was more of a women's activity. Indeed, lack of social support for exercise in later life is a key barrier to physical activity among older adults (Wilcox et al. 2003). Most of the men indicated that they would get more physical activity if they had someone who would participate with them. For example, Gilbert said that he would be more active "if I had a physical activity partner. The guy that lives down the street has a good bicycle. I mean, I would bike with him." Gilbert is a friendly and social man, seeking out nearly anyone he can find to show pictures of his grandkids. However, it seemed to be more difficult for him, and most of the other men in the study, to find other people with whom to be active.

Nolee's story shows the positive influence of friends on her diet and activity patterns. She works full-time at a community center and volunteers in her spare time. Nolee has struggled with her weight for the past 15 years when she was diagnosed with type 2 diabetes. She took medications but did not change her diet, considering diabetes "no big deal." When she was at her heaviest and had skyrocketing A1C levels (blood sugar), her doctor told her that she might not be around much longer to play with her ten grandchildren and great-grandchild. She immediately enrolled in Weight Watchers at the community center. Many of the women in the program were friends and encouraged each other outside of the program. She says that her female roommate is a positive influence on her activity, as they are both "determined to lose weight" and have been successful since joining Weight Watchers.

Blanche and Cornelia are regulars at the community center. Both women have limited mobility due to a series of health conditions that impede their ability to participate in physical activities. Instead, Blanche and Cornelia strategized to eat healthy lunches with each other, knowing that they often had the trade-off of unhealthy dinners at home with their families. Both women purchased their daily lunches at the community-center café and both almost always chose the salad and

sandwich combo plate when they ate together, talking about how they were watching their weight or trying to be healthier. However, Blanche's home dietary patterns indicated that she was much less health conscious when eating with her family members. Blanche reported eating TV dinners at home where she lives with her disabled daughter, or "last night for dinner; I had a hot dog, potato chips, and a glass of chocolate milk . . . and brownies," items she never purchases for lunch with her friends.

The social pressures of managing one's health in front of friends can result in positive dietary patterns. In Blanche's case, the community-center café may also present her with her only option to eat a healthy meal each day. Because she and her daughter both have physical disabilities and receive a small amount of disability income, it is difficult for them to go shopping, keep fresh and healthy produce in the house, and prepare healthy meals. They rely on whatever food is quick, cheap, and easy to make at home. Blanche indicated that lunch at the community center was her main meal of the day. This situation is in contrast to Cornelia, who lives with her husband. Although he also experiences some illness, he still works as a security guard, providing extra income to the household. Consequently, Cornelia had the resources, ability, and desire to continue making elaborate meals at home. Cornelia indicated cooking for herself and her husband, "usually a meat and a vegetable, but it might be rice, it might be potatoes, it might be a macaroni dish . . . or a hearty wintertime stew." Cornelia was just one of several respondents who reported an important role of their family on their dietary or activity patterns.

Social Opportunities

Another consideration for the diet and activity patterns of older adults in Anchorage is participation in a variety of public and social opportunities. Interviewees suggested that occupational and volunteering opportunities were a major driver for getting out of the house and being social in the community. Several older adults indicated that work or volunteering was one of the few reasons they had to leave the house and socialize with others. Most participants stated that they volunteered in one way or another, often at church or a community center.

After retiring from the workforce, Edna volunteered as a greeter at Walmart, an occupation that she enjoyed very much because she liked helping people and, "just making new friends. I still keep in contact with a lot of the customers." Blanche also socializes during her volunteer work where she spends five days a week at the community center. She said, "To me, it's not work; it's an enjoyable thing."

Although most participants were retired, even the seniors still in the workforce spent free time volunteering. For example, Lanny (who still works) said that volunteering made her feel more active in the community: "I feel more powerful and more, not powerful but more happier if I do something. Instead of just coming home and sit and don't do nothing." Nolee also enjoys a full life of working, volunteering, learning, and teaching,

I rarely sit down for more than 5 minutes. I'm on the go a lot, attend a lot of meetings, do a lot of volunteer work. Work here, teach classes, I am real active in my church, I take college-level classes in various books of the Bible and things like that. I volunteer for Operation Christmas Child; it's where you just give basket, food baskets to people who are, you know who wouldn't otherwise have holidays for their families.

Although several interviewees took classes, worked and/or volunteered, Lanny suggested that not all seniors in Anchorage have the opportunity or ability to do so, stating,

We have some of the seniors in our community [Samoans] . . . in Anchorage that would love to do such a thing. And just don't know where I got all that strength and the time to do all that stuff.

Indeed, eight participants reported that they did not have the strength, health, interest, or opportunity to work or volunteer. Expectedly, these individuals also indicated being more lonely and reported less activity than those who did work or volunteer outside of the home.

Ethnicity and Subsistence Practices

Participants in this study belonging to ethnic minority groups felt particularly influenced by their cultural identity in regard to their dietary and physical activity patterns. For example, Nolee stated that local food items are meaningful for her when her family gathers. She stated, "we always have smoked fish, we always have fish pie, we always have, you know that's part of our, the way I grew up." Nolee says that these foods are not just a supplement to her local diet, but these native foods are culturally meaningful to her, another common thread among Anchorage participants. She reports that although she has extensive networks throughout the state, halibut is still difficult to obtain "because you've gotta take a charter, and it's so expensive. You know, it's one of the things that I hate about the fact that I don't have a boat."

Nolee did find some ways to continue traditional subsistence activities in the Anchorage area. For example, "I go blueberry picking every summer, I go blueberry picking and cranberry picking at Hatcher's Pass. Fishing on Knik and the Kenai [rivers]." However, she is relatively young and still

very active; it may be that many Alaska Native seniors in Anchorage are not so physically able to continue obtaining local foods as they age, which are physically rigorous activities usually located outside of urban areas.

Sergei is a man who refers to himself as a "Kodiak Creole," of mixed Alaska Native and Russian descent. He has severe physical limitations, such as obesity, nerve pain, Wegener's Disease,³ and bad knees requiring replacement surgeries, which forced him into a motorized wheelchair and restricts his ability to engage in subsistence activities. Sergei grew up as an extremely active youth in Anchorage with parents that took him fishing, hunting, and trapping outside of town. His sons now live in rural villages where they continue these activities, but Sergei wistfully admits that he can no longer participate in such active pursuits,

Set-netting over at Beluga, down the inlet toward the village of Tyonek and on a really, really, really good day, we'd get 900 fish and that's where you're in a skiff and you're putting [seine] nets in the water and pulling the nets out and it's really difficult physical work. It kind of reminds me of hay baling or something, you know. It's pretty, you can get pretty sweaty. But I found that to be some of the most rewarding work I've ever done, set-netting each summer for years was just really neat . . . But I've been in this [wheelchair] since I got here [apartment complex] two and a half to three years ago.

Although Sergei could not engage in subsistence activities, he still valued traditional and native foods, whenever he could obtain them. This was a common theme for Alaska Native participants in this study. Few were still actively engaged in harvesting traditional foods, but the food items themselves still held meaning however they were acquired.

For Ada, a woman raised in the Seattle area, traditional Alaskan foods played an important role in her upbringing, as they do for many Alaskans. Ada's father owned a salmon cannery, so she was raised on traditional foods like salmon, halibut, clams, crab, octopus, sea cucumber, scallops, oysters, and cod. As a senior in Anchorage with family in the "Lower 48," she has little ability to obtain traditional foods from her home region. Instead, she takes a shuttle bus over to the local Native health corporation's senior-program building, where lunches are served to Alaska Native seniors living in Anchorage. She says that halibut is her favorite, mostly because it is too expensive for her to buy on her own. Ada laments that it has been three years since she bought seafood because it costs so much: "When I found out how much fish costs, I was in a state of shock."

Besides local senior's programs, Alaska Natives living in cities have access to traditional

food at local cultural events like potlatches. Alaskan potlatches are social gatherings aimed to strengthen ceremonial, spiritual, social, and cultural aspects of communities (Gilbert 2014). Many communities in Alaska have slight variations in potlatch customs, signifying events such as births, marriages, and most commonly, deaths. Nolee attends at least four potlatches per year. Although these events are often funerary, she says that the food there is, "wonderful, absolutely wonderful . . . [there is] native dancing, native fiddlers. I usually make *agutak*, the Eskimo ice cream." Sharing food at cultural events like potlatches is a common way for Alaskans to maintain and strengthen their cultural connections; however, traveling to attend such events can be difficult for older adults.

The Media

Interview respondents indicated that health programming on television and reading articles about health in senior magazines might have a positive impact. Josephine and Fatima reported watching TV programs and reading magazines on healthy aging practices, which give them practical advice. Josephine described to us how she is trying to eat more healthfully lately, such as trying to incorporate more nuts and seeds into her diet. She said she had trouble remembering to buy them in the store, as "they're supposed to be so good and because I try to listen to Dr. Oz, but I haven't been successful yet with those chia seeds." She reports that she "makes notes" of advice that she thinks applies to her while she watches the show. Josephine added, "I do think he has wonderful ideas and some women are really, have great improvements." Josephine believes that taking advice from television doctors is part of her generally healthy lifestyle. She also reported that she "never eats processed foods."

After her divorce, Josephine continued making healthy choices such as quitting smoking and joining a Better Breather's Club that met once a month to listen to

interesting speakers with useful health information, or sometimes I do exercises there like yoga or other types of exercise. It's probably half and half; half the time it's speakers, and half the time it's working out.

Interview participant Kyung also agreed that the media has a strong role to play in determining individual actions and behaviors. Kyung, who was born in South Korea during its communist era, says that "propaganda" is necessary to ensure a "revolution of the diet." Indeed, some research shows that targeted mass media campaigns can promote healthy eating and physical activity practices (Beaudoin et al. 2007).

Discussion

Participants in this study articulated a variety of individual, interpersonal, community, and societal influences on diet and activity practices, which closely reflect the domains of the socioecological model. These results reveal that weight loss/body weight concerns, friends and peers, family influences, social opportunities, ethnicity and subsistence practices, and the media are significant sociocultural factors for dietary and physical activity patterns among this sample of older adults in Anchorage.

Seniors in Anchorage reported a variety of individual dietary and activity negotiations, often revolving around the perceived necessity to eat healthier foods and get more exercise. For example, Nolee and Edna demonstrate that some Anchorage seniors, when provided with adequate supports, can be motivated to make significant diet and activity changes for improved health outcomes. Research shows that older adults are aware of what foods and activities are considered healthy and that they can often recall physician recommendations for diet and exercise changes (Bardach et al. 2016, 2017). However, possessing such knowledge does not always translate into action. Most notably, Milton demonstrates the "constant battle" that people may face, and the subsequent guilt, as they crave foods that are considered unhealthy choices. Much public health messaging for obesity reduction is aimed at individuals to make better choices, often termed "lifestyle modification," despite the limited success of such intervention efforts (Chan and Woo 2010).

These study results have also demonstrated that interpersonal influences might affect dietary and physical activity practices for seniors in Anchorage via their friends and family. According to research, the pathways linking friends and family to increase physical activity and healthy food choices may be through intrinsic rewards such as support, encouragement, and companionship (Fraser and Spink 2002; Shaikh et al. 2008). However, social networks and community influences can also reinforce unhealthy eating patterns (Schoenberg et al. 2013), so the relationships between social networks and nutritional status outcomes in the research are far from straightforward.

Kenjii is an example of an Anchorage senior whose nutritional status is reliant upon the people around him, namely his paid caregivers. This is a significant concern for him and other homebound or disabled seniors in Alaska because personal-care attending agencies are understaffed and experience high staff turnover, largely due to low pay and high-stress work environments (Bureau of Labor Statistics 2016; Kelley 2014). Kenjii showed how dietary intake can fluctuate due to changing

staff for seniors in Anchorage, a situation out of his own control. Research also shows that isolated seniors get less physical activity, such that adults who have more commitments and engagements outside of the home get more physical activity than those who are homebound (Belon et al. 2014).

Additionally, cultural identity played an important role for participants of ethnic minority groups in this study, such as Alaska Native and Asian, who spoke about their favored foods and activities. Anthropologists have long understood that the cultural meaning of foodways can be powerful determinants of nutrition and health (Lewin 1943; Mead 1964), especially for older adults (Howell and Loeb 1969). Traditional skills and harvesting activities are closely associated with social connections and food-sharing practices, all of which are also correlated with greater recognition of cultural identity (Ohmagari and Berkes 1997; Smith 2007). Cultural identity is reinforced through foods and activities, which have great meaning for these seniors, who may struggle to maintain such ties as they get older in urban spaces (Lowe 2010; Redwood et al. 2008). Indeed, rural Alaskans tend to have greater access to wild local foods than urban residents (Johnson et al. 2009; Selle 2007). Nolee's experiences trading and bartering with her social networks in rural villages demonstrates the complicated ways in which urban Alaskans often procure desired local food items (Lee 2002).

Lastly, this study demonstrated that societal influences such as the media have an effect on diet and activity practices for older adults in Anchorage. The media are cultural phenomena, both a reflection of cultural norms as well as a driver of culture change (Rothenbuhler and Coman 2005). As such, the media can be a powerful force acting on the dietary and physical activity patterns of the young and old, alike (Nestle 2013). Research has shown that increased consumption of the media tends to be associated with decreased physical activity as it is a sedentary pursuit, especially in children (Crooks 2000; Marshall et al. 2004). Additionally, commercial advertising of fast foods in the media can act as a powerful barrier to healthy eating among adults who consume such media (Schoenberg et al. 2013). However, Josephine and Fatima's consumption of media, coupled with other research among urban adults, suggests that specific media messaging may be an effective catalyst for increasing physical activity and healthy eating among some adult population, including Indigenous Americans (Bachar et al. 2006; Beaudoin et al. 2007; Gittelsohn and Rowan 2011).

Recommendations for Future Work

Results from these interviews were used to construct questionnaires to more accurately measure

the dietary intake, physical activity practices, and the sociocultural influences on those patterns among a larger sample of seniors in Anchorage (publication forthcoming). For example, a socio-cultural influences survey was created from these qualitative results and utilized in conjunction with an Alaskan-food frequency questionnaire, a physical activity assessment for seniors, and anthropometric measurements to determine the relationships between diet, activity, and nutritional status outcomes in this population.

However, these interview results also suggest that future research with older adults in Anchorage may benefit from a socioecological or biocultural anthropological approach to nutritional-status outcomes. Since much public health work tends to focus on the role of the physical and "obesogenic" environment (Chaput et al. 2011; Hemphill et al. 2008; Ulijaszek 2007), a meaningful future study would be holistic in nature, systematically investigating individual, social, community, and societal influences of food intake and physical activity (Davis et al. 2011; Okada 2010; Tarasenko et al. 2015).

The results from this study also support other research that indicates a need for more culturally responsive programs that maintain relationships with family members and make connections between seniors with similar healthy aging goals in order to improve diet and activity practices (Bardach et al. 2016). Such programming would ideally also engage urban seniors in volunteer opportunities while addressing transportation and economic considerations for Anchorage's vulnerable seniors.

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Endnotes

1. Names of all community centers, living complexes, and research participants have been changed to protect their anonymity.
2. *Agutak*, or Eskimo ice cream, is a mixture of berries, whitefish, sugar, and whipped fat (often Crisco or seal oil). Sometimes additions such as tundra greens or roots are added.
3. Wegener's Granulomatosis causes inflammation of the blood vessels, restricting blood flow to the

kidneys, lungs, and upper respiratory tract, resulting in muscle weakness, nosebleeds, ear infections, chest pain, shortness of breath, joint aches, and swelling.

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