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TOBACCO USE AMONG ALASKA NATIVE AND AMERICAN INDIAN COLLEGE
STUDENTS

By

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Tobacco use among Alaska Native and American Indian college students

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The prevalence of tobacco use is disproportionately high among American Indian and Alaska Native people, with rates and patterns of use varying greatly by tribe, community and geographical region. Targeted interventions are needed to reduce this troubling disparity between non-Native and Native rates of use. Among non-Native individuals, the college years are being investigated as a time when lifelong tobacco use patterns may be established, and interventions are being tested to help college students to stop using tobacco. Currently, no interventions have been developed for American Indian or Alaska Native college students. Data obtained from Alaska Native college students at a site in Alaska and American Indian college students at a site in Montana ($n = 68$ and 105 , respectively) were analyzed to describe tobacco use and related characteristics within each population and to determine whether differences existed between the populations with respect to proportion of students using spit tobacco and using tobacco in a ceremonial context. The proportions of current tobacco users in Alaska and Montana were 63% and 54%, respectively. A significantly higher proportion of Montana than Alaska participants used tobacco in a ceremonial context. A significantly higher proportion of Alaska than Montana participants were users of spit tobacco, with some Alaskan participants' use of Iqmik (a homemade substance made from combining leaf tobacco and a regional botanical substance) contributing to that difference. Qualitative research conducted with Alaska Native college student participants in combination with survey results yielded information about the psychosocial factors related to tobacco use and the acceptability of various potential interventions to help Native college students stop using tobacco.

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CHAPTER 1: INTRODUCTION

Tobacco Use among Native American People

American Indians and Alaska Natives have higher rates of tobacco use than any other ethnic group in the United States (Centers for Disease Control [CDC], 2000, 2003a, 2004; Kurian & Cardarelli, 2007). Prevalence of current smoking is at 40.2% among American Indians and Alaska Natives nationwide, compared with smoking prevalence of 26.5% for the general population (CDC, 2004). Disparities in smoking prevalence emerge in adolescence, with American Indian adolescents smoking at higher rates than non-Indian adolescents (Beauvais, Thurman, Burnside, and Plested, 2007). Although the process by which health disparities emerge is complicated by socioeconomic and other factors, the high prevalence of tobacco use in this population likely contributes to their disparately poor health status (Fagan, Moolchan, Lawrence, Fernander, and Ponder, 2007). At the national level, health care goals include the reduction of health disparities in ethnic minority groups (United States Department of Health and Human Services [USDHHS], 2000), and the reduction of tobacco use among American Indian and Alaska Native people has been identified as a potentially effective way to move toward that goal.

However, a closer examination of the prevalence and patterns of tobacco use in Native American communities reveals great variability within this population. “American Indians and Alaska Natives” is a term that describes an extremely heterogeneous group of indigenous North Americans, with diverse and sometimes overlapping tribal, cultural, and geographical backgrounds. Although national-level surveillance research consistently finds this group to have comparatively high prevalence of smoking, geographic analysis of these data show that the smoking prevalence is highest among Alaska Native and

Northern Plains American Indian people, with American Indian people in the Southwestern United States smoking prevalence being similar to or lower than national prevalence for other ethnic groups (CDC, 2003b). Similarly, the prevalence of tobacco use, the type of tobacco used, and the context of use vary dramatically between communities and tribal groups (USDHHS, 1998a).

Given the heterogeneity of tobacco use patterns, attitudes and beliefs among Native American people, interventions developed for specific groups or populations must rely upon data gathered from the specified population. The research described in this paper is focused upon the tobacco use patterns of two specific populations of Native American people: Alaska Natives residing in the Yukon-Kuskokwim Delta (Y-K Delta) Region of Southwest Alaska and American Indians residing in Montana. The tobacco use patterns of college students within these populations are assessed and described, and the research aims to provide a broader context by demonstrating the heterogeneity of tobacco use among Native American in comparing these two populations.

Tobacco Use among Y-K Delta Alaska Natives

The prevalence of tobacco use is particularly high among Alaska Native people residing in the Y-K Delta region of Southwest Alaska (Kaplan, Lanier, Merritt, and Siegel, 1997). The Y-K Delta area is home to 25,000 people living in 48 communities affiliated with 56 tribes spread over an area the size of the state of Oregon. The vast majority (approximately 95%) of Y-K Delta residents identify as Alaska Native (Yup'ik, Cup'ik, or Athabascan); the population represents the world's largest concentration of indigenous Eskimo people. The region is accessible only by air travel, and thus, is somewhat geographically and socially isolated. Many area residents speak Yup'ik or

Cup'ik as their first language, and most residents rely on subsistence activities to feed their families. The Y-K Delta region is distinct from other regions of the state in terms of geography and culture; however, it is important to note that cultural heterogeneity exists within the region. Prevalence and patterns of tobacco use vary widely by area (e.g., coastal vs. tundra, Yukon vs. Kuskokwim), community and tribe.

Among Alaska Natives on the Y-K Delta, the use of spit tobacco (ST) is widespread. Prevalence of ST use is between 4 and 8 times higher among Alaska Natives than in the general population of the United States (CDC, 1991; Kaplan, et al., 1997). This discrepancy is particularly high among women, with Alaska Native women using ST at rates of 50%, compared with rates of 0.7% among women in the general population (USDHHS, 2000).

Contributing to high rates of ST use among Alaska Natives residing on the Y-K Delta is the widespread and socially accepted use of Iqmik, a form of spit tobacco derived from mixing ash from burned fungus that grows on local trees with commercial fire-cured leaf tobacco; local people refer to this mixture as Iqmik (Blanchette, Renner, Held, Enoch, and Angstman, 2002; Renner, Patten, and Enoch, 2004; Renner, et al., 2005). Qualitative research involving focus groups with Y-K Delta Alaska Native people has revealed that Iqmik use may be perceived as “safer” or more “natural” than commercial tobacco products (Renner, et al., 2004). Furthermore, focus group participants indicate that Iqmik use is most common among women, who typically mix Iqmik for themselves and other family members by chewing tobacco and ash together in their mouths, then spitting the mixture into a container for later use (Renner, et al., 2004).

Further demonstrating the perceived safety of Iqmik is the reportedly common practice of adults giving Iqmik to children, sometimes as a soothing remedy (Renner, et al., 2004). The social acceptability and perceived safety of Iqmik use translate into high rates of Iqmik use among very young children, with 12% of children aged 6-10 acknowledging current spit tobacco use to health care providers (Angstman, et al., 2007). It is important to note that the practice of giving Iqmik to young children does *not* appear to reflect a relaxed attitude towards youth substance use. A strong sobriety movement exists in the Y-K Delta region, and all area communities have elected to limit or ban the sale of alcohol at the local level. Additional data collected in the above study showed that prevalence of acknowledged drug and alcohol use by children and adolescents was extremely low (Angstman, et al.). Children's ready acknowledgement of their spit tobacco use to health care providers thus indicates that spit tobacco may be viewed as qualitatively different from other drugs.

In fact, there is little evidence to suggest that Iqmik use is safer than the use of commercially-produced tobacco products. The tobacco leaves used to make Iqmik contain carcinogens associated with the fire-curing process. The process of mixing tobacco with ash burned from punk fungus may actually increase the addictive potential of Iqmik compared with commercial products. Chemical analysis of Iqmik reveals that adding punk fungus ash to tobacco raises the pH level of the tobacco, essentially converting the nicotine in the mixture to a freebase form (Renner, et al., 2005). Thus, it is likely that users of Iqmik may be absorbing nicotine very rapidly, increasing the likelihood that users may experience nicotine toxicity. Indeed, Iqmik users interviewed for a qualitative study reported experiencing symptoms consistent with nicotine toxicity

at times, including vomiting, dizziness, and “pounding heart” (Renner, et al.). The consequences of chronic rapid absorption of nicotine for overall health, and cardiovascular health in particular, are unknown.

Tobacco Use among American Indians in Montana

Within Montana are located seven reservations that are home to nine principle tribes: Blackfeet Nation, Chippewa Cree Tribe, Confederated Salish and Kootenai Tribes, Crow Tribe, Fort Belknap, Fort Peck, and Northern Cheyenne. Self-identified American Indians make up about 6% of the total population of Montana. Although the American Indian population in Montana is concentrated on reservations, American Indians live throughout the state, in every county in Montana (Montana Legislative Council, 1995). Tribes within Montana represent sovereign nations, and the distinction of “Montana American Indians” is somewhat artificial in that great heterogeneity exists in the cultural backgrounds of Indian people within the state.

As stated earlier, rates of tobacco use vary greatly between subgroups of American Indians according to tribal background, geographic location and other factors; rates of cigarette use vary from as low as 17% among American Indians in the Southwest United States to 44.2% among American Indians in the Northern Plains (USDHHS, 1998a). In Montana, where some (but not all) tribal groups can be identified as “Northern Plains,” recent data suggest that 39% of American Indian adults residing on or near reservations smoke, and 13% of American Indian men chew spit tobacco (Montana Department of Health and Human Services [MDHHS], 2006).

Qualitative research conducted with Northern Plains American Indian participants found that several major themes emerged that serve as possible explanations for the

persistently high prevalence of smoking in this population (Hodge & Struthers, 2006). Among focus group participants, the researchers documented attitudes of leniency towards smoking and an overall stance of “live and let live” with respect to health behaviors. Also, although participants were aware of the health risks posed by smoking, they viewed these risks as insignificant compared with other sources of harm in their lives. Finally, participants described commitment to the social rituals and habits associated with smoking and reluctance to relinquish those habits. Again, research with Northern Plains Indians may provide relevant background for some, but not all, American Indian people in Montana.

Comparing tobacco use patterns in American Indian and Alaska Native populations

For this research, the term “Native American” will be used to describe all indigenous people in North America. “Alaska Native” will describe those individuals indigenous to Alaska, and “American Indian” will describe those indigenous people residing outside of Alaska. Within Alaska, some Native groups are referred to as “Indians” to differentiate them from “Eskimos” (typically coastal people who are culturally different from those living in the interior). To avoid confusion, the term “Indian” will not be used when referring to any Alaska Native person in this study, though we recognize that many Alaska Native people identify as “Indian.” Also, the phrases “tribally enrolled” and “enrolled in a corporation” will be used to describe a person’s belonging to their own tribal organization or nation. In Montana, the words “tribal enrollment” are typically used to describe this status, while in Alaska, indigenous people may be “enrolled” as members or shareholders of their tribal corporation.

For the purposes of quantitative research on tobacco use, American Indians and Alaska Natives are very often considered as one group (Denny & Taylor, 1999). However, as described earlier, patterns of tobacco use may differ greatly between groups, and attitudes and beliefs about tobacco use are likely to vary widely between groups, as well. One important feature according to which American Indian and Alaska Native groups may differ is the use of tobacco for ceremonial or spiritual purposes. Many American Indian tribes engage in ceremonial tobacco use, and an understanding of tobacco as ceremonial is vital to the development of appropriate interventions for those tribes (Choi, et al, 2006; Daley, et al., 2006; Winter, 2000). Although qualitative research has demonstrated that American Indian people view ceremonial tobacco use as distinct from recreational tobacco use (Kegler, Cleaver, and Yazzie-Valencia, 2000; Swaney & Harris, 2004; Unger, Soto, and Baezconde-Garbanati, 2006), and quantitative evidence suggests ceremonial and recreational tobacco use are not correlated in American Indian college students (Angstman, Harris, Harrar, River, and Webster, 2008), researchers and interventionists must continually assess for the potential implications of ceremonial tobacco use in American Indian populations (Winter).

In contrast to American Indian populations, ceremonial use of tobacco was not originally a part of Alaska Native culture. Tobacco was first introduced to indigenous Alaskans by traders, who gave it to Alaska Native people in exchange for extremely valuable goods (Fortuine, 1996). Because Iqmik is a partially homemade product, Iqmik use has often been assumed to be “spiritual” or “traditional” for Alaska Native people. However, existing focus group research and historical records indicate that Iqmik is used recreationally and, to a lesser extent, as a home remedy by Y-K Delta Alaska Natives; its

use for spiritual purposes has not been thus far been documented (Fortuine; Renner, et al., 2004).

Clearly, the cultural context of tobacco use is an important factor to consider when approaching the problem of reducing tobacco use rates (Unger, et al., 2003). Although combining Alaska Native and American Indian populations into one group has been useful in identifying overall disparities in rates of health behaviors, the development of appropriate interventions to reduce tobacco use rates among Native people will necessitate differentiating these groups from one another. The research described in this paper serves as an initial step towards identifying the differences between two distinct groups with respect to their tobacco use patterns and beliefs. Specifically, we explored tobacco use in a population of Alaska Native college students in Alaska and compared their use patterns against those found in a sample of American Indian college students located in Montana.

Health Consequences of Tobacco Use

Tobacco use is the leading preventable cause of death in the United States; cigarette smoking alone is thought to cause 1 in 5 deaths in this country (CDC, 2002). As a result, tobacco use is a major target of surveillance and intervention, including policy-level changes to discourage use, prevention efforts, and interventions to help people reduce or stop their tobacco use. A brief review of the literature on the health consequences of tobacco use follows.

Cigarette smoking and health

Male smokers are 23 times more likely to develop lung cancer than non-smokers, and smoking has been linked to several other types of cancer, as well (USDHHS, 2004).

Cigarette smokers are between 2 and 4 times more likely to develop coronary heart disease, twice as likely to suffer a stroke, and ten times more likely to die from chronic obstructive lung disease than non-smokers (Ockene & Miller, 1997; USDHHS, 1989; USDHHS, 1998). Additionally, health consequences exist even for younger smokers who have not yet developed chronic, regular smoking patterns. Respiratory irritations are more often present among college-aged smokers than nonsmokers (Prokhorov, Pallonen, Niaura, and Prochaska, 1994), and among high school students, one study found the odds of experiencing respiratory problems are doubled for smokers (Raveis & Kandel, 1987).

Spit tobacco use and health

Research documenting the health consequences of spit tobacco use is much more limited than cigarette research. Two main factors make it difficult to accurately determine health risks associated with spit tobacco use. First, the composition of spit tobacco differs widely between groups, and among many people, the substance used is partly or wholly non-commercial (and thus, has no standard composition). This heterogeneity results in variability in the levels of chemicals and addictive potential of spit tobacco substances. Second, the prevalence of spit tobacco (while high among a few subpopulations of people) is generally low in industrialized nations where much of the world's research is conducted. As a result, large-scale epidemiological studies monitoring morbidity and mortality associated with spit tobacco use have been challenging.

In spite of these challenges, some researchers have investigated the health risks associated with spit tobacco use. A review of the literature on this topic concluded that mixed evidence exists linking spit tobacco use with health problems (Critchley & Unal, 2003). The review found that oral cancer had been linked with spit tobacco use in India

but not in the United States; however, it noted that research conducted thus far in the United States does not have adequate power to detect differences. Other studies found associations between spit tobacco use and cardiovascular disease, dental caries, and cancer of other sites (though significant limitations were noted in this research).

Government surveillance programs conclude that spit tobacco has been linked to cancer and to oral problems (CDC, 2007a).

Health consequences of tobacco use among American Indians

The physical health status of American Indian people is generally poorer than that of White Americans, and tobacco-related disease accounts for part of that discrepancy (Castor, et al., 2006; Denny & Tayler, 1999). Prevalence of cardiovascular disease is disproportionately high among American Indian people compared with non-Natives (CDC, 2003b). Although the prevalence of lung cancer is lower in American Indians as a group than the general population, prevalence varies by region along with varying smoking prevalence, and among Northern Plains Indian people, lung cancer rates are disproportionately high (CDC, 2003c). Smoking also exacerbates symptoms of diabetes, the prevalence of which is disproportionately high and increasing among American Indians (CDC, 2003d). Interventions targeting recreational tobacco use among American Indians may contribute to reducing health disparities and improving the general health status of American Indian people.

Health consequences of tobacco use among Alaska Natives

Cancer and heart disease are the two leading causes of death among Alaska Native adults (Indian Health Service [IHS], 1998). Research has found that rates of cancer are 30% higher for Alaska Natives than Whites; furthermore, cancer rates among

Alaska Native people are increasing, while rates are decreasing for the US population at large (Ehram, Lanier, Holck, and Sandidge, 2001). Spit tobacco use contributes to poor oral health (Nelson, et al., 2006). The dental health of Y-K Delta Alaska Native adults and children is comparatively poor, with Alaska Native children and adolescents experiencing 2.5 times more dental caries than the same age group nationally (Sekiguchi, Guay, Brown, and Spangler, 2005). Y-K Delta Alaska Native children also experience disparately poor respiratory health status, and links have been drawn between respiratory disease and both spit tobacco use in the child's home and exposure to environmental tobacco smoke (Gessner, Ussery, Parkinson, and Breiman, 1995; Lewis, et al., 2004). Of additional concern are the potential negative effects of maternal Iqmik use on neonatal health. Although the nature and degree of harm caused to newborns is not known, there is evidence that babies born to mothers who use Iqmik display measurable signs of withdrawal in the days following birth (Hurt, et al., 2005).

The health disparities described above are measurable even without adequate data on Alaska Native health status and the health care they receive. Rhoades (2006) argues that more comprehensive and systematic data collection is needed if we are to document the true extent of health disparities that exist in Native American populations, where access to health care (and thus, data collection) is often limited. In the Y-K Delta region, collecting data that accurately reflect the health status of residents is a persistent challenge. Many residents do not have telephones, and many older residents do not speak English. Most research relies on data collected from medical records, excluding the portion of the population who do not receive regular medical care due to geographical, economic, and cultural factors.

Tobacco Use among College Students

Although tobacco use rates in the United States are decreasing overall, rates of smoking among individuals aged 18-25 increased from 34.6% in 1994 to 41.6% in 1998 (National Institute of Drug Abuse [NIDA], 2002). Furthermore, although individuals attending college are less likely to use tobacco than those not attending college, rates of use for college students are increasing, from 22% in 1990 to 28% in 1997 (Wechsler, Dowdall, Davenport, and Castillo, 1995). Closer investigations of the patterns of use among college students indicate that while occasional cigarette use is common among college students, with 30-44% of college smokers smoking less than one cigarette a day (Wechsler, et al.), tobacco use rates increase overall during the college years. Between 11% and 28% of college students initiate regular smoking patterns during college (Everett, et al., 1999). Longitudinal research investigating smoking among college students shows that the proportion of students smoking a half pack a day or more increases with age during the college years (USDHHS, 1998b).

Taken together, research on college smoking suggests that smoking patterns evolve during the college years, and adult smoking patterns may largely be established during this time. Although more longitudinal research is needed to evaluate this possibility, some theorists have suggested that the college years may be an ideal time to implement interventions aimed at reducing tobacco use and changing patterns of use that might otherwise develop into regular adult smoking. Research evaluating the effectiveness of interventions designed to reduce smoking among college students will be reviewed in more detail below.

Tobacco use among Native American college students

To date, no published research has specifically examined tobacco use patterns among Alaska Native or American Indian college students. College students belonging to ethnic minority groups may have backgrounds or current developmental issues that make it inappropriate to generalize research findings from studies done with majority culture college students to them. For example, Phinney and Alipuria (1990) found that ethnic identity development was more salient and important for non-White college students than for White students. The fact that ethnic identity is a key concern for non-White college students may mean that these concerns interact with the development of their tobacco use patterns. Recent research has detected a positive relationship between American Indian cultural identification and recreational smoking in a population of urban American Indian adults (Angstman, Harris, Golbeck, and Swaney, 2008). Thus, research that specifically examines tobacco use in minority college student populations is necessary if their needs are to be met.

As a preliminary step toward understanding tobacco use patterns in Native American college students, Swaney and Harris (2004) carried out a focus group with American Indian college students attending a summer program at a western university. They found that all participants reported using tobacco ceremonially, and that participants were very knowledgeable about the plants used by their tribes and the protocol for ceremonial use. About half the participants also used recreational tobacco. When asked about possible interventions, participants emphasized that interventions would be most successful if they were non-directive, as it would be “disrespectful to tell people what to do.” Although these are preliminary findings, they suggest that cultural context will be an

important factor to consider when designing tobacco interventions with Native American college students. Additional qualitative research will be necessary to gain a more complete understanding of the cultural factors affecting tobacco use and cessation among American Indian and Alaska Native college students, and the study described here is intended to further our understanding of these groups. This research documents important data necessary to the development of targeted interventions designed to reduce tobacco use among Native American college students, possibly changing lifelong health behavior patterns.

Designing Interventions to Reduce Tobacco Use

The Center for Disease Control recommends that cessation programs be implemented as part of larger comprehensive tobacco control initiatives (also involving surveillance, health communication, and public policy changes; CDC, 2007b). However, existing and empirically validated interventions to help people stop using tobacco are not necessarily appropriate for use with Native American people, for whom the type and context of tobacco use may vary greatly from those in the general population. Furthermore, traditional cessation programs may not be as effective with college students, whose needs might be different from those of older, heavy smokers with established patterns of use—the population most likely to access smoking cessation programs (Fiore, et al., 1990). However, as described below, research investigating cessation interventions for these special populations is still in its preliminary stages.

Interventions to help Native American people stop using tobacco

Several qualitative studies have considered the particular needs of Native American communities for the development of interventions to reduce the recreational

use of tobacco in those communities. American Indian focus group participants in Minneapolis reported a lack of trust in conventional health care interventions generally and pharmacological treatment specifically; however, they noted that testimonials from Native people at the community level might increase their trust in these interventions (Burgess, et al., 2007; Fu, et al., 2007). Focus group participants in the Midwest, in two separate studies, gave feedback on the development of interventions: both studies verified the importance of addressing traditional or ceremonial tobacco use in interventions with Native people and recommended the increased use of Native American imagery and themes in intervention materials (Choi, et al., 2006; Daley, et. al., 2006). Researchers summarizing qualitative work with members of over 200 tribes suggest that preferences for a “Native” look to intervention materials and discussion of the role of spiritual use exist “pan-tribally,” for varied American Indian and even Alaska Native groups, and they argue that it may be possible to develop interventions appropriate for use with diverse Native groups (Daley, et al.).

Qualitative research has been carried out investigating the acceptability of interventions for Alaska Native people residing on the Y-K Delta. In focus groups carried out with Y-K Delta Alaska Native participants, recommendations emerging for anti-tobacco intervention included the use of testimonials from local, Native people and the use of medical providers to disseminate information. Alaska Native participants indicated that it is not appropriate to tell others what to do, even children, and that the decision to stop using tobacco must “come from within” (Renner, et al., 2004). Such information is important in the development of interventions, because programs viewed as heavy-handed or based on rules (e.g., no-smoking policies) might be ineffective with Alaska

Native people. In another Y-K Delta study, researchers queried Alaska Native people regarding general conceptions of wellness (Wolsko, Lardon, Hopkins and Ruppert, 2006). Themes emerging in this research included the importance of traditional subsistence activities, the necessity of understanding the implications of drastic, recent cultural change, and the importance of fostering community connection and connection with the landscape; these were all described as ways of improving wellness among Alaska Native individuals and communities. Interventions with Alaska Native people to decrease tobacco use might benefit from the inclusion of these ideas or activities.

Interventions to help college students stop using tobacco

Because research has shown that patterns of tobacco use evolve over the college years, with a significant proportion of college students establishing regular smoking patterns during this time, college smokers may be an appropriate target for interventions designed to moderate or stop their tobacco use. However, designing interventions that are acceptable to college students has proven to be challenging. Research has found that college students value interventions requiring little time and effort, and that they believe low-effort interventions to be equally as effective as high-effort interventions (Black & Babrow, 1991). Also, college students wishing to stop using tobacco report that they would overwhelmingly elect to quit on their own rather than participate in formal interventions (Hines, Nollen, & Fretz, 1996). Despite this apparent lack of interest in formal programs, researchers have demonstrated success in recruiting college students for tobacco cessation interventions (Cronk, et al., 2008; Schleicher, Harris, & Campbell, 2008). Also, two studies evaluating interventions with college students have demonstrated the effectiveness of those interventions. Dental interventions targeting

college spit tobacco users have significantly increased 1-year quit rates (Walsh, et al., 1999), and brief feedback counseling with college students was shown to be effective in increasing quit rates, reducing number of cigarettes smoked per day, and preventing initiation of tobacco use (Chan & Witherspoon, 1988). These studies, though limited in number, suggest that brief interventions may be successful in altering tobacco use patterns among college students.

The process of research in Native American communities

Research conducted in Native American communities faces ethical considerations that may affect both the process and content of that research (Caldwell, et. al., 2005). If such research is to be conducted responsibly, an understanding of ethical and cultural factors must inform the development and conduct of the research, as well as the dissemination of study results.

Critics of research conducted in Native American communities have often noted the problematic tension that exists between the best interest of the researcher (whose career stands to benefit from the research) and the community (Cochran, et al., 2008; Mitchell & Baker, 2005). Community-based participatory research has been proposed to be one way to place the control of research in the hands of the community, in keeping with principles of community empowerment and tribal sovereignty (Cochran, et al.).

In community-based participatory research, individuals from the community are involved in every stage of the research process, from the development of the research questions and methods to decisions about the dissemination of results. Tribal or community governing bodies are involved in the process of approving proposed research, and the researcher is not seen as the sole owner of the data collected as part of the

process. This is particularly important for communities governed by tribal organizations, who maintain intellectual property rights over information pertaining to their tribe's practices. Through community involvement in research, the traditional balance of power in the "researcher – subject" relationship is shifted, and the potential for abuse within that relationship is reduced.

Incorporating principles from community based participatory research into projects involving Native American communities is essential if researchers are to overcome the significant distrust many Native American people have towards researchers (Caldwell, et al., 2005). Past and present research findings tend to portray Native American communities as broken, helpless, and in need of outside "expert" assistance. Too often, problems are described without important contextual information, and community assets and strengths are ignored. Researchers must find ways to develop projects that use community assets to provide information and ideas that benefit the community.

An additional consideration in research with Native American communities is the tension between "scientific" assumptions traditionally held by researchers and Native ways of knowing, which may come into conflict. For example, researchers working with Alaska Native elders to investigate sobriety report that oral tradition (important in Alaska Native culture) informed their development of research methods, because representatives of Native communities expressed distrust of quantitative methods. When quantitative data were necessary for funding requirements, the researchers developed various verbal methods for collecting those data (Mohatt, et al., 2004).

To the extent feasible, the research described in this paper was conducted with the approval and involvement of the communities involved. Furthermore, the study incorporated qualitative components in an attempt insure cultural appropriateness in the collection of data. Although the study does not represent truly community-based participatory research practice (in part because the development of the project was driven primarily by the researcher's interests), a conscious attempt has been made to conduct this research with sensitivity and concern for the interests of the research sites. The degree to which this process objective was met will be assessed in more detail below.

The present study: Specific Aims

This study achieved three overall aims. First, using survey methodology, we established tobacco use rates and patterns and described beliefs about tobacco use and cessation among Alaska Native college students attending college in Western Alaska and among American Indian college students attending a tribal college in Montana. Second, we compared our findings from the survey with Alaska Native college students with findings from the same survey carried out with American Indian college students. Third, using qualitative focus group methodology, Alaska Native college students' beliefs and attitudes about tobacco use and feedback about proposed interventions were documented.

To accomplish the first aim, survey data were collected from Alaska Native and American Indian college students, and their distinct tobacco use characteristics were assessed and described. Although tobacco use rates were assessed and psychosocial correlates were established for each group, the following specific hypotheses were tested for the Alaska group:

Hypothesis 1A) Among Alaska Native college students who use tobacco, cigarettes and commercial spit tobacco will be perceived as more harmful than Iqmik use.

Hypothesis 1B) Among Alaska Native college students who use tobacco, there will be more interest in quitting cigarette and commercial chew use than Iqmik use.

Hypothesis 1C) Among Alaska Native college students, a higher percentage of females will use spit tobacco (defined as either Iqmik or commercial chew) compared with males.

To accomplish the second aim, survey data obtained from Alaska Native college students was compared with survey data obtained from American Indian college students in Montana. As part of this comparison, the following hypotheses were tested:

Hypothesis 2A) Rates of spit tobacco (Iqmik or commercial chew) use among Alaska Native college students will be significantly higher than rates of use among American Indian college students.

Hypothesis 2B) The percentage of Alaska Native college students who report using tobacco in a traditional or spiritual way will be significantly lower than the percentage of American Indian students reporting traditional or spiritual use.

Our third aim involved the qualitative exploration and interpretation of Alaska Native survey data by Alaska Native college student participants. This aim was carried out in part to insure that conclusions drawn from survey data were appropriate given the cultural context of the participants. Theorists have recommended the use of qualitative methods for research with Native American participants to insure conclusions are drawn in a culturally competent way (Caldwell, et al., 2005; Cochran, et al., 2007). To accomplish the third aim, a focus group was carried out with Alaska Native college

students. During the focus group, results were presented from the survey referenced in Aims 1 and 2 and students' interpretations of these results were sought. In particular, feedback was sought from students about survey responses pertaining to the development of interventions. In this way, Aim 3 served as an intermediate step between this study and future research developing, implementing, and evaluating tobacco use interventions for Alaska Native college students.

Exploratory Aim 3A) Obtain "expert" indigenous interpretations of the survey data previously obtained.

Exploratory Aim 3B) Based on survey findings relevant to intervention, explore potential interventions for stopping tobacco use and seek participant feedback and suggestions about those proposed interventions.

CHAPTER 2: METHOD

Participants

Participants were students recruited at a college campus in the Y-K Delta region of Western Alaska and a tribal college in Montana. All participants were 18 years of age and enrolled as students at their campus. Ethnicity was not used as inclusion criteria for survey administration; however, for the focus groups, participants were sought who self-identified as Alaska Native. Tobacco use status was not used as inclusion criterion for either the survey or the focus groups. Current and former tobacco users, as well as those who have never used tobacco, participated in this study. A description of participants by site follows, and complete survey participant demographics are displayed in Table 1.

Montana Site

In Montana, data were collected at a tribal college located on a reservation. During April and May of 2007, researchers recruited 126 unique respondents for our survey (with some of those respondents completing the survey multiple times, for a total of 137 surveys). The response rate for this survey was quite high (137 of 154 students approached for recruitment, or 89%). Only Montana participants endorsing Native American ethnicity ($n = 105$) were included in the analyzed sample. This group had a mean age of 30 years, and 63% were female. The vast majority of participants (96%) were enrolled in college full-time, and 67% were in their first or second year of college. Sixteen percent lived on-campus, 61% were single (never married), and 68% had children. Tribal enrollment was endorsed by 77% of participants. Survey respondents were heterogeneous in their tribal affiliations and self-identified ethnic backgrounds; all tribes in Montana were represented in the sample, as well as tribes from neighboring and

more remote states. Tribal affiliation data are not reported to protect participant and tribal confidentiality.

Alaska Site

In Alaska, data were obtained at a college campus serving the residents of the Yukon-Kuskokwim Delta (described earlier). The campus provides rural and Alaska Native people an opportunity to access the state higher education system without leaving their home communities on the Y-K Delta. Because of the demographics of its students, it is designated a Native-serving institution for the purposes of federal funding.

At the Alaska site, between September 2007 and January 2008, the researcher recruited 77 survey respondents. The survey response rate was high, with 60 of 69 (87%) available participants completing surveys. However, it should be noted that Alaska survey response rates included only those participants approached systematically in classrooms (where response rates could be accurately documented). The researcher also conducted informal, non-systematic recruitment outside of classrooms, and a significant proportion of the total number of respondents (17 of 77, 22%) were secured through these informal methods. Nine participants were excluded from analysis because they did not self-identify as Alaska Native, leaving an analyzed sample of 68.

Alaska Native survey participants ($n = 68$) had a mean age of 27 years, and 68% were female. Eight-one percent identified solely as Alaska Native, while 19% identified as Alaska Native in combination with some other ethnicity. Enrollment in a Native Corporation (the general equivalent of tribal enrollment) was endorsed by 87% of participants. A diverse collection of tribal affiliations was represented in the sample; again, those data are not reported to protect community and participant confidentiality.

The majority of participants (77%) were enrolled in college full-time, 69% were in their first or second year of college, 49% lived on-campus, 72% were single (never married), and 43% had children.

Focus group participants ($n = 7$) were recruited during February, 2008.

Participants had a mean age of 24 years, 71% were female, and all endorsed Alaska Native ethnicity. Most participants (86%) were full-time students, and most (86%) had completed the tobacco use survey administered earlier in the year as part of this research. A full range of tobacco use behaviors was represented in the group, from participants who had never tried any type of tobacco to those who endorsed near-daily use. It is notable that current tobacco use was endorsed by a comparatively lower proportion of focus group than survey participants (29% vs. 63%). Although the small size of the focus group prevents us from drawing firm conclusions about this apparent discrepancy, it is possible that current tobacco users felt uncomfortable participating in a focus group discussion of their tobacco use, and non-users may have been over-represented in our group.

Recruitment and Sampling

For the survey portion of this study, we accessed a sample of students at the Montana site and as many students as possible at the Alaska site. The size of our sample in Alaska is necessarily limited to the small size of the on-campus student body at the rural campus where research was conducted.

Given that we were unable to increase the size of our sample in Alaska, we attempted to limit our hypotheses to those testable with adequate power. Preliminary power analyses were conducted based on estimates of tobacco use rates in the existing

literature. It is important to note that existing data were scarce and incomplete; some studies document the prevalence of tobacco use only for a certain age group or gender, or fail to break down spit tobacco use by type. However, based on those preliminary estimates, Hypotheses 1A, 1B, 2A, and 2B were all expected to be testable with adequate power (.80 or higher). Hypothesis 1C (testing gender differences in type of tobacco use within the Alaska sample) was expected to be underpowered (between .45 and .97, depending on estimates used), but was retained because of the potential importance of this hypothesis for the development of interventions.

Montana Site Survey

At the Montana site, enrollment for full-time students at the outset of our study was 717, and approximately 76% of those students reported being Native American. Several sampling methods were considered for obtaining data in Montana. We decided that obtaining a random sample from a complete list of full-time students at the college might not be feasible due to the likelihood of a low response rate. Because true random sampling might introduce substantial response bias due to an expected low response rate, we chose instead to randomly select from larger classes and seek instructor permission to administer surveys in class.

Researchers selected 18 classes from a randomized list; all 18 instructors agreed to let the researchers enter their classroom, though for three classes, extenuating circumstances made data collection impossible. Flyers were distributed via e-mail for the purposes of familiarizing faculty, staff and students with the research being conducted. Students were offered entry into a lottery for one of six \$25 cash prizes in exchange for their participation; also, surveys were completed during class time.

Due to the fact that some Montana site students were present in multiple classes where survey administration took place, we gave them the opportunity to complete the survey multiple times (and thus, have multiple entries into the lottery); it was felt that it would be unfair to take up their class time on multiple occasions without the possibility of increased compensation. Therefore, Montana student surveys included a cover sheet asking for information about the number of times the survey was completed and documenting a student-generated, non-identifiable personal identification number to be used to connect multiple surveys from the same person. For participants completing multiple surveys, the first survey completed was used in our analysis and the other(s) left out of the analysis.

Participants at the Montana site were intended to serve as a comparison group for the Alaskan group of 68 survey respondents; thus, with an n of 132, they were over-sampled with the intent of matching Montana participants to Alaska participants according to demographic variables. However, matching was determined to be unnecessary, as a review of the demographic characteristics of both groups revealed no significant between-group differences in gender, age, or year in school. Thus, we excluded Montana participants not endorsing Native American ethnicity ($n = 27$), and included all other Montana participants in analysis ($n = 105$).

Alaska Site Survey

At the Alaska site, we sought to obtain survey data from as many on-campus students as possible, with an initial goal of 80 participants. We successfully recruited 77 participants, 68 of whom endorsed Native American ethnicity and were included in analysis. The researchers considered increasing the number of Alaskan participants by

expanding our recruitment to students off-campus (attending school via distance) or to other campuses in Alaska. However, doing so would have significantly altered the characteristics of the population being studied in a way that would have undermined our research goals. Alaska Native people on the Y-K Delta exhibit tobacco use patterns that are distinct from other Native people in the state, and sampling off-campus students (who are typically older, working, nontraditional students) would dilute our ability to isolate a population of young adult college students who may still be developing lifelong tobacco use patterns. Therefore, we chose to limit our Alaska sample.

Alaska survey participants were recruited using a variety of methods. The researcher sought permission from informally selected instructors of large classes to advertise the survey near the end of their class periods, and students were invited to complete the survey after the class ended (on their own time). Also, on several occasions, the researcher advertised her presence in the campus student lounge via e-mail, fliers, and word of mouth, and students approached her in the lounge to complete surveys. Alaska survey respondents were offered a \$10 gift certificate to a local store in exchange for their participation.

Alaska Site Focus Group

Participants for the Alaska focus group were recruited using fliers distributed on campus and via e-mail, brief class presentations, and word-of-mouth. Sign-up sheets for participation were posted in the centrally-located lobby during the recruitment period. Recruitment methods stressed the study inclusion criteria of Alaska Native identification and student status. The group was not stratified according to tobacco use status, gender, or other variables. Focus groups composed of both Y-K Delta Alaska Native male and

female adolescents have been successfully carried out in the past (Renner, et al., 2004), and we did not encounter problems with running a group with this mixed gender composition. Current, former and never tobacco users were invited to participate because we wished to access general perceptions of tobacco use and to document and analyze any difference of opinion that might arise between individuals with different use status. Students involved in the focus group were offered \$25 gift certificates to a local store and food and beverages for their participation.

Design and Procedures

Survey

To accomplish Aims 1 and 2, self-report surveys were administered by the researcher and, at the Montana site, a team of collaborators (see Appendix A). The researchers remained available to participants as they completed surveys. An informed consent form describing the study and confidentiality protections was included in the survey packet (see Appendices B and C), and the researcher(s) reviewed that form verbally before the asking participants to sign the consent and proceed with the survey. The survey was adapted to the needs of Alaska Native and American Indian students from a college smoking survey and Native American tobacco use surveys used in previous research (Harris, et al., 2002; Harris, et al., 2004; Koontz, et al., 2004; Patten, et al., 2007).

For this study, the sample of American Indian students attending college in Montana serves as a comparison group for the Alaska Native college student population. The two groups are distinct but comparable in many ways: although the Y-K Delta does not have a tribal college, the campus selected is similar to a tribal college in that it is

relatively small in size and serves primarily Native American students close to their home communities. Furthermore, this project's methods were chosen to maximize the comparability of our two samples, allowing for the measurement and documentation of differences that exist between these two populations with respect to their tobacco use.

Focus Group

To accomplish Aim 3, one focus group was carried out at the Alaska site. Initially, three focus groups were planned for this study; however, recruitment efforts for the second and third scheduled groups yielded participant numbers too small for the groups to be feasible. Thus, due to time constraints, and in light of the fact that a great deal of information had been documented during the first group, the decision was made to cancel the second and third groups.

The focus group was conducted and qualitative data analyzed according to contemporary qualitative research methods based in grounded theory (Mays & Pope, 1996; Patton, 2003; Strauss & Corbin, 1998). Grounded theory is theory that emerges from real-world empirical experiences (interviews, observations, etc.) rather than from the researcher's perspective or the perspective of the scientific community. The practices of specifying research hypotheses prior to data collection and "testing" existing scientific theories are inconsistent with the grounded theory approach, as these practices do not allow for observed real-world experiences to generate theory without the assumptions of the scientific community altering that theory. Grounded theory offers systematic procedures for qualitative inquiry designed to allow theory to emerge from data in a standardized and scientifically rigorous way.

Focus groups are useful ways to stimulate participants' recall and reporting of attitudes, values, and experiences (Kruger, 1994). Focus groups are also increasingly used by health researchers as a way of developing and testing interventions (Basch, 1987). Also, as described earlier, for minority or community-based samples it is particularly important to use qualitative research like focus groups in combination with quantitative methods because it allows the researcher to minimize the bias introduced by their own distance from or lack of understanding of the group involved in the research, and qualitative methods may provide a more appropriate match with indigenous ways of communicating and understanding information. Thus, the researcher is able to "ask the right questions" using their quantitative methods, and following data collection, they are better able offer culturally relevant and accurate interpretations of quantitative data (Mays & Pope).

For this research, sufficient qualitative work related to tobacco use on the Y-K Delta has been done to enable the researcher to "ask the right questions" in the survey (Renner, et al., 2004). However, the focus group conducted in this study enabled the researcher to obtain an "indigenous interpretation" of survey data from Alaska Native college students for the benefit of interpretation and discussion of results. Also, seeking feedback about interventions from Alaska Native college students provides a natural link between this research and future work developing, implementing and testing interventions to help reduce tobacco use rates within this population. For these reasons, the qualitative component of this study was carried out following the collection and analysis of survey data.

The focus group was co-facilitated by the researcher and a local Alaska Native individual involved in tobacco cessation and research (but not employed by the college). The researcher has been trained in focus group facilitation, and has experience facilitating focus groups with Alaska Native youth. The co-facilitator received brief didactic training regarding this research protocol; she has formal training and extensive experience in focus group moderation on the Y-K Delta. The co-facilitator is fluent in both English and Yup'ik, which is the first language of many Y-K Delta Alaska Natives. The focus group was digitally recorded and transcribed.

The group was two hours in duration, and was held in the student lounge at the campus (reserved and closed off for the duration of the group). Food and beverages were available for participants. After co-facilitators obtained informed consent from all participants (see Appendix D), focus group participants were asked to complete a short demographic and tobacco use survey used to describe their group characteristics. The facilitators described the focus group process at the outset, and relayed ground rules to the participants (e.g. confidentiality). The facilitators used structured guides consisting of questions and possible follow-up probes for those questions (see Appendix E); however, the structure of the group was flexible enough to allow for follow-up questions, comments, and discussion among participants. The guide was adapted from those used successfully in pilot work exploring tobacco use among tribal college students (Harris, River, & Webster, 2008; Swaney & Harris, 2004). At the conclusion of the group, participants were given their gift certificates and thanked for their participation. Finally, contact information for the researcher was provided.

Focus group data were transcribed verbatim, and consultation was sought on the appropriate spellings / meanings of Yup'ik words used during the group. A combination of standard methods, including the grounded theory method described earlier, was used for focus group analysis (Mays & Pope, 1996; Strauss & Corbin, 1998). First, transcriptions were “open-coded” for the purpose of identifying overarching themes that will serve as coding groups. Then, responses were coded by two independent coders, with intercoder agreement being assessed. The primary and secondary coder resolved discrepancies in their coding. A third, independent coder naïve to discussions to resolve discrepancies coded a selected portion of the manuscript, and intercoder agreement between her and the primary coder was assessed. Finally, we interpreted the grouped responses of the participants and drew meaningful conclusions based on the data.

Materials

Surveys administered to Alaska and Montana students were identical across all domains, except that Montana surveys included a cover sheet a personal identification number to identify surveys completed by the same participant. Cover sheets were discarded as soon as duplicate surveys were identified. Surveys were worded in such a way that they could be completed by students at both the Alaska and Montana sites, and care was taken to differentiate between recreational and ceremonial / spiritual use of tobacco in the survey instructions and again, as a reminder, partway through the survey.

Frequency of Use. Frequency of tobacco use was assessed separately for multiple types of tobacco, including cigarettes, commercial spit tobacco (chew), and Iqmik. Assessment of multiple types of tobacco use has been carried out in previous studies with Y-K Delta Alaska Natives, and yields important information about unique patterns of use

(Hurt, et al., 2005). Following the recommendations of the Center for Disease Control (CDC, 1997) and others (Presley, Meilman, and Lyerla, 1994; USDHHS, 1998b; Wechsler, et al., 1995), we assessed for frequency of use during the last 30 days (“Did you use in the past 30 days?” and “In the past 30 days, how many days did you smoke [chew commercial chew, chew Iqmik]?”), then assessed for amount of tobacco used per day (“In the past 30 days, on the days that you smoked [chewed commercial chew, chewed Iqmik], how many times per day did you smoke?”). Consistent with prior studies with adolescents (CDC, 1997), “tobacco user” was defined as any person who used tobacco one day out of the last 30. Other research with college students has used 30-day point prevalence as an indicator of smoker status because many college students use tobacco erratically or infrequently (Weschler, et al.).

Motivation to Quit Tobacco and Perceived Harm of Tobacco Use. Motivation to quit each type of use was assessed using the questions: “Are you motivated to quit smoking [chewing commercial chew, chewing Iqmik]?” and “On a scale of 1-10, how motivated are you to quit smoking [chewing commercial chew, chewing Iqmik]?” The perceived health risks of varying levels of use of each type of tobacco was also assessed with the questions: “Do you believe cigarettes [commercial chew, Iqmik] are harmful?” and “On a scale of 1-10, how much do you think a person risks physically harming themselves if they smoke [chew commercial spit tobacco, chew Iqmik]?” For the purposes of descriptive analysis of the scaled questions, participant responses were averaged by type of tobacco. In previous research assessing the perceived harm of tobacco use in college student populations, likert-type scales have been used successfully to measure tobacco-related attitudes and beliefs (Waters, et al., 2006).

Traditional Use of Tobacco. Ceremonial or spiritual use of tobacco was assessed with a series of questions: “Have you [your family, your tribe] used tobacco for ceremonial or spiritual purposes?” Additionally, if individuals used tobacco ceremonially, they were asked how often that occurred. We did not query participants about the specific ways in which they used tobacco spiritually, as these questions may not be appropriate to ask in a survey format and might potentially violate the intellectual property rights of participants’ tribes (Maxon, et al., 2005). Hypothesis 2B was tested using participant responses to the question about individual-level ceremonial or spiritual tobacco use.

Level of Cultural Identification. Because ethnic identity formation is important and salient for many minority college students (Phinney & Alipuria, 1990), and because the development of tobacco use patterns may interact with ethnic identity formation, level of cultural identification was assessed and described in this research. Participants’ levels of cultural identification to Native American, White, or other cultures was measured using the Orthogonal Cultural Identification Scale (OCIS; Oetting, Swaim, and Chiarella, 1998). Typically, measures of cultural identification assume that an individual *either* identifies with one culture *or* another across different domains. These scales may limit respondent’s ability to capture experiences of biculturalism accurately. In fact, theorists have argued that cultural identity cannot be defined as one variable, and thus, is not a construct that can be easily examined in research (Phinney, 2006).

Native American individuals—like individuals of other ethnicities—may be competent in and identify with more than one cultural group, depending on the situation they are in, the people they are with, etc. This type of biculturalism or multiculturalism

may be especially common among Native American college students, who may identify strongly with their Native culture at home and around family, but may also identify with and be competent in the academic (often European-American) culture they are exposed to at school. The Oetting scale has the ability to capture biculturalism by allowing participants to document their identification with more than one culture across different domains. Specifically, participant responses group them into one of four categories: Bicultural (high identification with both cultures), Integrated (high White / low NA), Separated (high NA / low White), and Marginalized (low NA / low White).

For this research, data on cultural identification was used for descriptive purposes, and was not involved in the primary hypotheses.

Intervention Preferences. Respondents answered a series of questions about their preference for different types of interventions (e.g., school vs. medical clinic, professional vs. peer counseling, Native vs. non-Native counselor). These questions were derived in part from qualitative work with Alaska Native adolescents exploring possible tobacco use interventions (Patten, et al., 2007). Responses to these survey questions were used as a prompt for student feedback about interventions sought during the focus group portion of the study.

Course of Tobacco Use and Severity of Addiction. The survey gathered data on other factors related to tobacco use, including the age of onset of tobacco use, attempts to quit, and level of addiction. The severity of smoking dependence was assessed with a six-item Fagerstrom Test for Nicotine Dependence (FTND; Heatherton, Kozlowski, Frecker, and Fagerstrom, 1991; Radzius, Moolchan, Henningfield, Heishman, and Gallo, 2001) and the severity of spit tobacco dependence was assessed with a six-item version of the

Fagerstrom Test for Nicotine Dependence adapted for spit tobacco use (FTND-ST; Ebbert, Patten, and Schroeder, 2006). This measure correlates highly with more detailed measures of nicotine dependence for spit tobacco users such as the Fagerstrom Tolerance Questionnaire-ST (Boyle, Jensen, Hatsukami, and Severson, 1995; Thomas, et al., 2006). The FTND-ST was the most appropriate measure for this study because it did not require that spit tobacco's nicotine content be reported; it is not feasible to gather information about the nicotine content of Iqmik, which is a homemade product not distributed in standard amounts (Ebert, et al.).

Regulation of Negative Affect. There is some evidence to suggest that college students use tobacco because they expect that their use will help them to regulate negative affect, and that these expectancies are measurable in a college population (Schleicher, Harris, Catley, Hall, & Nazir, in press). Our survey included four items designed to measure the extent to which participants use tobacco because they expected the product to help regulate their negative affect. These questions were asked for both chewing and smoking.

Depression. Depression is shown to be associated with level of smoking, nicotine dependence, and smoking relapse, in both adult and adolescent populations (Brown, Lewinsohn, Seeley, and Wagner, 1996; Glassman, et al., 1990; Murphy, et al., 2003). Depression is also shown to be related to spit tobacco use in adolescents, although limited research exists on this topic (Tercyak & Audrain, 2002). For this research, depressive symptoms were measured with a 10-item version of the Center for Epidemiologic Studies Depression Scale (CES-D 10; Andresen, Malmgren, Carter and Patrick, 1994). This scale was adapted from the original 20-item CES-D, a measure with well-established reliability

and validity that has been applied extensively in assessment of depressive symptoms for the purposes of research (Radloff, 1977). The shorter version of the CES-D is predictive of overall depression scores on the original CES-D, although the 10-item scale has not retained the ability to measure the four factors measurable with the 20-item scale (Andresen, et al.).

Perceived Stress. Higher levels of perceived stress have been linked to smoking in adolescents (Finkelstein, Kubzansky, and Goodman, 2006). Participants' levels of perceived stress were assessed using the ten-item Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988).

Social Patterns of Use. Social patterns of use were assessed, such as peer influence over tobacco use and whether tobacco is used by others in the home. These data are not directly related to the primary hypotheses of this study, but they may be used to inform the development of interventions for this population.

Focus Group Protocol. The focus group protocol used to investigate the third aim of this study was developed by combining elements of a protocol used successfully in qualitative research on tobacco use with American Indian tribal college students in Montana (Harris, River, and Webster, 2008; Swaney & Harris, 2004) and a second protocol used with Alaska Native adolescents on the Y-K Delta (Patten, et al., 2007) (see Appendix E). Content areas explored included tobacco use patterns, context of use, advantages and disadvantages of use, Iqmik preparation and use, motivation to change, quitting, and intervention delivery modes. Some questions prompted the focus group participants to reflect on our survey findings and offer their interpretations of those

findings. Student participants' explanations for our quantitative findings will be incorporated into interpretations made and conclusions drawn for data publication.

Study Implementation

Because data for this study were collected at remote sites, considerable collaboration was necessary with individuals involved with each site, and those collaborations were essential to the success of this research.

Substantial efforts were made to initiate relationships at the Montana site, where the researcher did not have contacts prior to this study. Campus leadership, including a member of the IRB board, were kept apprised of study developments via e-mail, and their feedback and attendance at study meetings was invited (though not expected, due to our reluctance to add to their workload). A tribal college faculty member with public health interests was initially involved with developing our survey and helping to design a recruitment strategy, and as we progressed towards data collection, we formed a team including a University of Montana M.P.H. student who resides near the Montana site and an American Indian undergraduate student enrolled at the site with experience and interest in tobacco policy and research work. The undergraduate student was involved in data collection as a paid research assistant. She facilitated requests to faculty to enter classes, was involved in collecting data (usually with one other research team member), and managed the lottery for cash prizes. Research team members have provided statistics to campus leadership in report form and presented descriptive results from the survey in two classes at the Montana site, involving students in an informal discussion about the data. After completion of the survey, the team has continued to build their research

program at the Montana site. The quality and importance of the developing relationship with the study site will be addressed in more detail in the discussion.

In the case of the Alaska site, the researcher had long-standing relationships with individuals at the study site prior to beginning this project, as she was previously employed at the site. Thus, the groundwork had already been laid for collaborative work with that site. Campus leadership was involved in determining the best way to recruit students into the study. Several faculty volunteered time during their classes for the researcher to advertise the study. Survey data have been made available to the site in report form, and plans have been made for the researcher to re-enter some classes to present study results.

Human Subjects Protections

This research was initially thought to be subject to approval by The University of Montana IRB, the Alaska Area IRB, the Montana tribal college's IRB, the Yukon-Kuskokwim Health Corporation Human Subjects Committee, and Alaska Native Tribal Health Consortium Board of Directors. The researcher first sought approval from The University of Montana IRB for the entire project; that approval was granted. The Montana study site's IRB granted approval for the Montana arm of the project (with cultural review). In Alaska, the researcher approached YKHC, ANTHC, and the Alaska Area IRB, and it was determined that this project was not subject to review by those organizations because healthcare recipients were not involved in the study, and the planned focus group facilitator (though a YKHC employee) was able to conduct the focus groups on her own time. The researcher also approached The University of Alaska

Fairbanks IRB, but they approved the project with brief administrative review (having noted and deferred to the UM IRB's approval).

Survey data were not identified with participant names. Rather, each survey was marked with a study identification number that specified the research site, and in Montana, multiple surveys by the same participant were linked together via ID number. Although demographic information was collected on the survey and prior to the focus groups, that information was sufficiently vague as to prevent the identification of the participants, even in small communities. Descriptive data were reported in aggregate form. Data were kept in a locked briefcase in the care of the researcher or research team while at the study site and transported to UM for data entry (where anonymous electronic data are kept in a password-protected file and raw data remain locked in a file cabinet in the care of the Harris research lab).

Focus group participants were thoroughly briefed on the importance of confidentiality. Participants were asked to use first names only; transcription of recordings deleted all names used, and recordings were destroyed following transcription.

Informed consent forms were signed by all participants, although this procedure was not required for an anonymous survey. Consent forms described the research project, risks to participants, and plan for protecting confidentiality. The form stressed that participation in the research was voluntary and that a decision not to participate would not affect the student's standing at his or her college. The researcher described the study and reviewed the form with participants verbally, then participants were asked to sign one copy of the form and return it to the researcher, and another was made available to them for their records. Consent forms did not contain study identification numbers, so it was

not possible to link the signed forms with survey or focus group data. Consent forms were kept separate from study data but protected with the same locking system as the data. Consent forms and all paper-based data will be destroyed one year following the publication of study results; scanned copies of survey data and entered data will be kept in electronic format.

When working with tribal populations, the concept of “human subjects protection” needs to be expanded to include protection of tribal and community wellbeing. Due to the sensitive nature of research with Alaska Native and American Indian populations, steps were taken to insure the cultural appropriateness of this project throughout the research process. Collaborative and participatory methods that build upon relationships between researchers and communities are considered by many to be extremely important for research with Native American populations (Caldwell, et al., 2005; Quiqley, 2006), and this project was conducted with those principles in mind.

In an effort to further protect the communities where research was conducted, and as recommended for research in tribal communities, the names of communities and campuses involved in this research have not been reported in this document to insure that data collected at the sites is not reported in a way that is damaging to the communities involved (Kaufman & Ramarao, 2005). Because the context of data collection is important to understanding the unique patterns of use in Alaska, the Y-K Delta region of the state is named and described. Consultation with a researcher experienced in conducting tobacco research in the Y-K Delta Region confirmed that past research has named the Y-K Delta region because research is typically conducted at the largest community in the region (where the hospital and other services are located) but research

participants reside in small, unidentified communities across the area (C. Patten, personal communication, April 9, 2008). This holds true for the present study as well: our college student participants are residents of many communities, and their particular communities and tribal affiliations are not identifiable in this document. The practice of naming the Y-K Delta region (but blinding participants' communities of residence) has been deemed acceptable by committees providing oversight for research conducted in this area.

The researcher remained in consultation with researchers at The University of Montana who are experienced in conducting research with Native American populations (Harris, Swaney and Schuldberg) and researchers at other sites who are experienced in conducting research with Alaska Native people living on the Y-K Delta (Patten, Enoch and Renner). Also, as described earlier, steps were taken to establish strong relationships with individuals at both research sites, and those individuals helped the researcher to insure that research was carried out in a way that was appropriate for the site.

CHAPTER 3: ANALYSIS AND RESULTS

Quantitative Analysis

All quantitative analyses were conducted using SPSS (version 15.0).

Exploratory Aim 1A

For this aim, we sought to describe tobacco use patterns, prevalence and correlates among college students at both sites. Hypothesis testing was not involved in Aim 1A. To accomplish this aim, we used survey data to describe the characteristics of tobacco use by type of tobacco and psychosocial variables for college students in Montana and Alaska. Table 2 displays data describing tobacco use patterns and tobacco-related beliefs for both sites, and Table 3 displays tobacco-related psychosocial correlates. For the descriptive statistics described below, non-Native participants have been excluded (as they have for hypothesis testing).

Montana: Tobacco use patterns and correlates. At the Montana site, 54% of the participants were classified as “tobacco users” on the basis of use of recreational tobacco one or more times in the last 30 days. Fifty-one percent of surveyed participants had smoked and 9% had chewed during the last 30 days. The vast majority of participants (93.3%) had tried some form of tobacco during their lifetime (with 90% having tried cigarettes, and 53% having tried commercial chew).

Among tobacco users in the sample, levels of nicotine addiction were low as measured by the FTND and FTND-ST scale items. Scores on both items range from 1-10, with scores of 6 or higher indicating high levels of nicotine dependence. Montana tobacco users averaged scores of 1.67 for both chewers and smokers. Fifty-six percent of smokers used on a daily basis, whereas only 22 % of chew users did so. Tobacco users

had initiated use at a mean age of 13 years, and 81% initiated use with cigarettes (as opposed to spit tobacco). Almost all users had tried to quit multiple times in the past, with about 55% endorsing more than five quit attempts. Almost all knew or thought they knew of resources available to help them quit. As a group, they preferred to get help in quitting from medical providers, family or friends instead of elders, mental health professionals or tribal college employees. Most indicated that the ethnic background of the person helping them quit did not matter, although a notable proportion (26.3%) preferred to get help from someone of their own ethnic background.

Psychosocial characteristics with the potential to be associated with tobacco use were assessed. Among those sampled, 41% endorsed elevated levels of depressive symptoms (defined as scores of 10 or above on the CES-D, as recommended by Andresen, et al., 1994), and levels of perceived stress as measured by the PSS also appear elevated when compared with a national normative group (normative mean of 13.02 compared with a sample mean of 18.41). Ninety-one percent of respondents reported that their tribes use tobacco for ceremonial reason, 57% said their families do so, and 47% said that they do so. Most respondents using tobacco ceremonially did so less than once a month. Cultural identification was calculated by summing the Native American and White American summed identification scores (ranging from 1-24), then classifying individuals as high or low on each dimension and categorizing them as bicultural, integrated, separated, or marginalized. Cultural identification scores revealed that respondents tended to be biculturally identified, with a very low percentage of participants falling into the marginalized category.

Alaska: Tobacco use patterns and correlates At the Alaska site, 63.2% of participants were classified as “tobacco users” on the basis of 30-day prevalence. About 50% used cigarettes, 21% used commercial chew, and 19% used Iqmik at least once during the 30 days prior to the survey. A sizeable proportion (21%) of Alaska respondents had used more than one type of tobacco during the 30 days prior to the survey. Almost all participants had tried some form of tobacco during their lifetimes (87% having tried cigarettes, 60% having tried commercial chew, and 54% having tried Iqmik).

Among tobacco users in the sample, levels of nicotine addiction as measured by the FTND and FTND-ST were low for smokers and chewers (1.2 and 1.4, respectively). Seventy-nine percent of smokers and 42% of chewers endorsed daily use. Tobacco users had initiated use at a mean age of 13.3 years; 44% initiated use with cigarettes, 37% with commercial chew, and 19% with Iqmik. About 77% of Alaskan participants had attempted to stop using tobacco, with only 12% reporting five or more attempts. Almost all participants (84%) knew of resources to help them quit. They preferred to seek help in quitting from friends, family and medical providers rather than elders, mental health professionals, or college staff. For most participants, the ethnicity of the person helping them did not matter; about 21% said they would prefer to be helped by someone of their own ethnic background.

Elevated depressive symptom scores of 10 or more were reported among 17.6% of Alaska participants, and their mean stress score was 14.43 (again, relative to a normative sample mean of 13.02). No Alaskan participant described their tribe, family or themselves as having used tobacco for ceremonial purposes. Most participants endorsed

high levels of bicultural identification, and as a group participants endorsed roughly similar levels of identification with the Native American and White American cultures.

Differences within the Alaska sample

Hypotheses 1A, 1B and 1C investigated differences within the Alaska Native sample. For Hypotheses 1A and 1B, hypothesis testing with adequate statistical power was not possible due to the lower-than-expected numbers of Iqmik users in our sample and the substantial proportion of students using multiple substances. Instead, for these two hypotheses, descriptive statistics are reported and exploratory analyses were conducted to determine whether a trend exists for individuals primarily using Iqmik to view their product as safer and to be less motivated to stop using than for individuals primarily using either commercial chew or cigarettes.

Descriptive statistics were calculated for perceived harm and motivation to quit each type of tobacco endorsed by users of that type of tobacco. Users of multiple forms of tobacco supplied data for each of the substances used during the past 30 days. Means and standard deviations were calculated for assigned Likert-scale 1-10 ratings for harm and motivation with the understanding that Likert scales do not produce interval data. These statistics are provided to give a general idea of participant responses. Among cigarette users ($n = 35$), 97% said that cigarettes were harmful, and the mean degree of harm assigned was 8.79. Seventy-one percent of cigarette users said they were motivated to quit using, and the mean degree of motivation was 6.91. Among commercial chew users ($n = 15$), 87% thought commercial chew was harmful, with a mean degree of harm of 8.69. Fifty-three percent of commercial chew users said they were motivated to quit, and the mean degree of motivation was 6.33. Among Iqmik users ($n = 13$), 85% of

respondents believed Iqmik was harmful, but the mean degree of harm assigned was only 6.64. Just 39% of Iqmik users endorsed motivation to quit, and the mean degree of motivation was 6.11. Again, for these descriptive analyses, users of multiple forms of tobacco provided harm and motivation ratings for each type of tobacco they used.

Exploratory statistical analyses were conducted to determine whether a trend exists for Iqmik being viewed as less harmful than other products, and whether Iqmik users are less motivated to quit than users of other products. For these analyses, participants were grouped according to their self-identified primary substance used, creating three independent samples. Due to the small number of Iqmik and Commercial Chew users, these analyses were underpowered and conducted with unequal cell sizes.

To determine whether differences exist in grouped participants' perceived level of harm of their primary substance, one-way analysis of variance was conducted with main tobacco type as the grouping variable and harm rating as the dependent variable. Group differences were significant ($F [2,33] = 5.78, p = .007$), with post-hoc Tukey's HSD tests locating the significant differences between Iqmik and commercial chew users ($p = .013$) and Iqmik and cigarette users ($p = .010$). Effect sizes for these findings were very large (Cohen's $d = 1.55$ and 1.26 , respectively). Although the difference in harm ratings for cigarettes and commercial chew were not significant, this difference did demonstrate a small effect size (Cohen's $d = .28$).

To determine whether differences exist in grouped participant motivation to quit their primary substances, a one-way analysis of variance was conducted with main tobacco type as the grouping variable and motivation rating as the dependent variable. Group differences were not significant ($F [2, 32] = .381, NS$). Small effect sizes were

found for the difference in motivation between cigarette users and both commercial chew and Iqmik users (Cohen's $D = .31$ and $.34$, respectively); the comparison between commercial chew and Iqmik users demonstrated basically no effect.

Hypothesis 1C was tested using a *chi*-squared test for differences of proportions (see Table 4). For this hypothesis, we expected that a significantly higher proportion ($p < .05$) of females would use spit tobacco compared with males. *Chi*-squared analysis revealed that the proportions of males and females using spit tobacco were not significantly different ($X^2 = 0.651$, $df = 1$, NS), and this hypothesis was not supported.

Comparison of Alaska and Montana samples

Hypotheses 2A and 2B involved a comparison of Alaska Native and American Indian samples (see Table 5). These hypotheses were tested using the *chi*-squared test of differences in proportions. To assess the need to control for group differences in demographic variables with the potential to influence tobacco use, age gender and year in school were compared using *t*-tests and crosstabs analysis. No significant differences were found between the Alaska and Montana samples. For Hypothesis 2A, we expected that a significantly higher proportion ($p < .05$) of Alaska Native than American Indian college students would use spit tobacco. For Hypothesis 2B, we expected that a significantly higher proportion ($p < .05$) of American Indian than Alaska Native college students would use tobacco in a traditional or spiritual way.

Chi-squared analysis revealed that Montana participants were significantly less likely than Alaska participants to use spit tobacco ($X^2 = 11.42$, $df = 1$, $p < .05$). Also, Montana participants were significantly more likely than Alaska participants to use tobacco in a spiritual context ($X^2 = 46.84$, $df = 1$, $p < .01$).

As expected, our sample size resulted in adequate power to detect differences for Hypotheses 2A and 2B, and Hypothesis 1C was underpowered but retained due to the potential importance for intervention development. Projective power analysis informed by existing research had led the researcher to expect adequate power to test 1A and 1B; however, as described earlier, unexpectedly low numbers of users for some products led to lack of power to detect differences for these analysis.

Qualitative Analysis

To accomplish Exploratory Aims 3A and 3B, we sought to obtain indigenous student interpretations of the survey data previously obtained and to explore potential interventions to help Alaska Native college students stop using tobacco. The focus group data were analyzed using methods consistent with grounded theory (Strauss & Corbin, 1998). Line-by-line analysis and open coding of the transcribed focus group data were carried out to identify the themes that emerged during the discussion. Those themes were grouped into categories and subcategories (see Appendix F). Next, two independent coders re-evaluated the data and grouped participant responses into the identified coding categories. Agreement between initial coders for a sample portion of the transcript showed good reliability (Cohen's $K = .69$; Altman, 1991; Cohen, 1960). Coders discussed and resolved discrepancies throughout the transcript. A third independent coder who was naïve to discussions to resolve discrepancies coded the sample portion of the transcript to confirm agreement with the primary coder and the validity of the coding scheme; again, good to very good agreement was shown (Cohen's $K = .80$). Finally, meaningful interpretations were drawn based on participant responses in each thematic

area. A summary of focus group results by category follows. Note that some related categories are combined.

Type of people who smoke, chew commercial chew, or chew Iqmik

Most participants thought that men and women smoke in equal proportions, although one participant thought men smoke more than women. While some participants felt men and women chew commercial chew and Iqmik in equal proportions, others felt that women chew more than men. Iqmik use, in particular, was thought to be widespread among all types of Alaska Native people, particularly those residing in villages: “Where I’m from, everyone, women and men and little kids, 10, 11-yr-olds, their parents make some for them and then give it to them.” Participants also stated that students at their college used Iqmik as well as other products.

Tobacco use among children

Participants stated that children use cigarettes, commercial chew and Iqmik. Some participants knew of children initiating tobacco use at a very early age, as early as two years old. Typically these stories of very early initiation involved Iqmik use. Participants said children initiate cigarette use during their teenage years. Children obtain Iqmik by stealing it from their parents or because their parents give it to them. Children obtain commercial chew and cigarettes by asking older people to buy the products for them, by stealing from family members, or (in the case of cigarettes) by finding butts on the ground and smoking the remainder.

Participants told stories of children hiding their tobacco use from adults. Some participants felt that children are more likely to chew than smoke because use of spit tobacco is easier to hide from adults: “You can chew more covertly than smoking—when

I was in school, kids would spit in the trash cans when the teachers weren't looking.”

Participants shared only one example of a children being caught using tobacco and punished (by being made to chew a large quantity of tobacco at once).

Health effects of tobacco

Participants described several negative health effects associated with tobacco use, including cancer, wheezing, smoke allergies, weakened immune system, tooth loss, hairy tongue, and “a big hole in your mouth.” Secondhand smoke was described as dangerous, particularly to children.

When describing the process of mixing and using Iqmik, participants shared their experiences with the physical effects of that substance. They described passing or blacking out, getting high, seeing stars, getting dizzy, and getting sick. However, participants noted that others, particularly elders, perceive Iqmik as safer than other commercially-produced tobacco products: “I think it makes the elders feel better because they know what they're putting into it. This is tobacco, that's all I'm adding, I'm not adding preservatives even though there might be some in the tobacco.” Participants also thought Iqmik might be viewed as safer because it is a regional substance, so less media attention is given to its negative health effects. However, within the group, no person endorsed the opinion that Iqmik was safer than other tobacco: “I used to hear people saying that Iqmik wasn't as bad as Copenhagen, but I don't think that's true. I think it's just as bad because it's ten times stronger.” Also, participants were uncertain of the safety of the ingredients in Iqmik: “Who really knows what's in it?”

Context of tobacco use

Many statements were given about where, when and why tobacco is used. Smoking was thought to be common at work, at home, and in bars when drinking, but not common at church. Chewing Iqmik and commercial chew was common for men while hunting and fishing (“to stay awake”) and for women while spending time with friends and playing games, like bingo. People of both genders who are very addicted to chewing use spit tobacco throughout the day, particularly after meals, and before bed. Iqmik, in particular, was described as more common in villages than larger communities.

Participants largely agreed that, while smoking is common and accepted in work settings, chewing commercial chew or Iqmik is unacceptable at work: “I think [people are] least likely to chew at work. Since a lot of workplaces don’t allow people to be chewing, they have to talk to other people so you don’t want a mouthful of spit.”

Substituting one type of tobacco for another

Participants described others’ substitution of an alternate tobacco product when their product of choice was unavailable. Participants said cigarette users switch to spit tobacco when they are out of cigarettes, and Iqmik users switch to commercial chew when they cannot obtain Iqmik. One participant said a family member had switched from Iqmik to commercial chew because Iqmik was too strong.

Making Iqmik

Several participants described making Iqmik or witnessing Iqmik being made. Many participant comments involved the aversive smell produced by making Iqmik. Participants said that people gather punk fungus to burn for ash or, as an alternative, they gather a leafy green plant called “Pelluukutaq” that grows on the tundra and dry it to mix

with tobacco. Once produced, the punk ash or “Araq” is sold at community stores or by individuals, or shared with family members or friends. Tobacco “twist” (e.g., leaf tobacco) is purchased at area stores. Students at the campus obtain the materials to make Iqmik from the store or from their parents. Some participants had experience with making the ash themselves.

Participants stated that Iqmik was once mixed in individuals’ mouths but now is more commonly mixed in a coffee grinder. The tobacco is cut up prior to mixing to facilitate the process. Some younger people add sugar to the mixture to make it taste better. They described younger family members making it for parents or grandparents.

Group influence on tobacco use

Participants repeatedly described family as being a major influence on tobacco use patterns. Almost all participants described multiple family members as being tobacco users. Children were said to initiate tobacco use because their parents and other family members chew and “pass it on” to them. Being around family was described as a trigger for use: “When I’m around relatives, I want to chew, but when I’m away from them I don’t want to chew.” Family use was also described as a barrier for quitting: “My mom chews and sometimes—I wonder how I’ll quit chewing.” Some participants said they wanted their family members to stop using, or described concern about family members’ health.

The influence of peers or friends was also said to affect tobacco use. Participants described pressure to use with friends who are using, and they stated that it is difficult to get support for quitting from friends who use. Some non-using participants stated that they pressure their friends not to use.

Some participants felt that aspects of belonging to Alaska Native culture influence tobacco use. One participant noted that tobacco use has been common among Native people “for generations, a long time.” Participants described some traditional uses of Iqmik unique to Alaska Native culture. One participant stated that she had heard of Iqmik being used as “offering,” suggesting a possible spiritual component to its use among some Alaska Native people.

Withdrawal, craving, and addiction

Participants perceived tobacco products as “addictive,” causing craving and withdrawal symptoms for those users that stop using or are unable to obtain the products. They described people as becoming mad, frustrated, fidgety, antsy, stressed out, mean, and having trouble concentrating when withdrawing from tobacco.

Affective regulation, stress, and coping

Participants described tobacco use as helping to regulate affect. They said that use of tobacco calms and relaxes users, eases frustration and sadness, makes people feel satisfied, and counteracts boredom. They also noted that a person’s inability to stop using tobacco lowers their self-esteem and makes them feel “sadder.”

Many participants described tobacco as increasing their own or others’ ability to cope with stress. Cigarettes were viewed as a “stress reliever” because smoking takes people away from their current task and requires them to go outside. Participants felt that many college students smoke and chew because they lack other ways to deal with stress: “Sometimes it’s stressful... maybe you have a kid like I do, and it’s the first time and you’re young, and it’s really hard going to school full time. It’s really hard. So you get

stressed a lot.” They described stress as a barrier to quitting and a trigger for relapse for those who are trying to quit.

Motivation to quit using tobacco

Participants who use tobacco described being motivated to quit; one participant stated she’d like to be tobacco-free in five years’ time. However, when survey results were shared indicating that students who use tobacco at the college endorsed a moderately high motivation to quit, participants said they were surprised by the results and stated they had not thought their peers were motivated to quit. Participants guessed that tobacco users at the campus might not share their motivation to quit for fear of failing in front of others.

Methods used / seen used to quit tobacco

Participants described some methods they had used to quit tobacco, including cutting down, quitting “cold turkey,” distraction with other activities, and substituting gum or candy. One participant said that coming to college had helped her to quit chewing. No participant had used psychopharmacology, counseling, or other formal intervention strategies to quit. They described several methods that they had seen others use to quit, including nicotine gum, nicotine inhaler, hypnotism, substituting gum or candy, and chewing on toothpicks. Some participants said they thought nicotine gum “just made [people] want to chew or smoke more.”

Preferences for quitting interventions, asking for help with quitting, and barriers to quitting

Participants stated they would ask medical professionals or friends and family for help. However, they shared that potential barriers to seeking help from medical

professionals are concerns about confidentiality at the hospital and the hassle of getting an appointment at the hospital (e.g., registration, insurance, waiting). Similarly, asking for help from friends and family had drawbacks: while they “support you” and “care about you,” many of them also use tobacco.

Participants agreed with presented survey results, and stated that they would not ask for help from elders, mental health professionals, or college faculty or staff. Participants were concerned that elders would either “scold” them or ask them to “figure out the answer” and “not give advice.” Also, they noted that many of them had poor or deteriorating Yup’ik language skills, making communication with elders who only speak Yup’ik difficult and provoking shame: “... maybe you feel dumb that you don’t understand, because it’s your culture. You don’t understand what they’re saying and it makes you feel low.” Another participant suggested that “low” feeling might trigger tobacco use. Participants thought seeking help from a mental health professional would be accompanied by stigma and might involve a large time commitment or loss of freedom. They shared a reluctance to seek help from college faculty and staff, citing embarrassment about their use and concern that faculty and staff would talk to each other about students who use tobacco: “They’ll have faculty meetings and they’ll be... ‘Oh, did you hear, [participant’s] chewing Iqmik. And [participant’s] smoking, too!’”

Generally, participants agreed that internet-based interventions or group interventions located on-campus and facilitated by a non-campus employee would be the most acceptable interventions to help students stop using tobacco. They stated they would not want to engage in phone counseling or one-on-one counseling in person. They indicated that frequent intervention would be helpful (e.g., “A couple of times a week”)

and said that in-person interventions should include food. They also expressed that having more options for exercising (e.g., a gym on campus) would help students to stop using tobacco.

CHAPTER 4: DISCUSSION AND CONCLUSION

This research represents an attempt to document differences in tobacco use patterns between two distinct groups of Native American college students: Alaska Native students residing on the Y-K Delta in Western Alaska, and American Indian college students residing in Montana. For the purposes of large-scale national research studies, Native American people are typically combined into one group, and thus those studies tell us little about the regional, tribal, or community patterns of tobacco use among Native American people. In order to design interventions that are effective in reducing tobacco use in a specific Native American population, specific information must be obtained about the patterns of use in that population and the beliefs about tobacco use endorsed by individuals in that population. This research provides those data for two unique groups of Native American students.

Difference in Tobacco Use in Alaska and Montana

Given the demographic similarities between our Alaska and Montana samples, the differences in their tobacco use patterns were quite striking. Although roughly the same proportion of students smoked cigarettes in each group, the proportion of spit tobacco users was significantly higher in the Alaska group, supporting our hypothesis. No Montana participant endorsed current use of Iqmik, which is not surprising in light of this being a regional substance. As a result of the high percentage of spit tobacco users in the Alaska sample and of the fact that some Alaskan participants only used spit tobacco (not cigarettes), the overall proportion of tobacco users in Alaska was higher than in Montana.

Our hypothesis with respect to ceremonial tobacco use was also supported. Montana students were significantly more likely to use tobacco in a ceremonial context

than Alaska students. In fact, no Alaskan survey respondents acknowledged using tobacco ceremonially. Interestingly, one focus group participant reported having heard of people using Iqmik for “offering,” possibly indicating that some Alaska Native individuals use Iqmik in a spiritual context. To our knowledge, spiritual use of Iqmik has not previously been documented in the research literature. Based on this finding, it seems unwise to assume that no Alaska Native individuals or subgroups use tobacco in a ceremonial or spiritual context.

Tobacco Characteristics of Alaskan Sample

Among Alaska Native students, the proportion of students using tobacco users during the last 30 days was quite high. A substantial proportion of students endorsed the use of multiple substances, and those patterns have implications for intervention. Focus group participants observed that many people in the region substitute one form of tobacco for another when their preferred product is not available, raising the possibility that college survey participants endorsing multiple forms of tobacco during the past 30 days are following that pattern.

Rates of Iqmik use among college students in our sample were substantially lower than rates documented elsewhere in the literature for Alaska Native adults in this region. There are several possible ways to account for this discrepancy. First, our college student sample included students from the community where the college is located and from smaller communities in the area with populations that are almost exclusively Alaska Native. It is possible that Iqmik use is not as common among residents of the college community as among residents of the surrounding communities. Evidence from the focus group supports this possibility, as participants from surrounding communities observed

that Iqmik is used by everyone “back home,” and one participant from the college community was totally unfamiliar with the use of Iqmik. Second, it is possible that tobacco use patterns are changing, and younger adults may be more likely to use commercial products than older adults. Third, the experience of college attendance may be influencing students’ choice of tobacco products, and, as a result, college students may be using Iqmik at lower rates than their non-college attending peers. Indeed, focus group participants noted that they chewed more frequently with their families back home, and one participant noted that it was easy for her to quit chewing when she came to college.

Although hypotheses 1A and 1B investigating the perceived harmfulness and motivation to quit Iqmik compared with other substances were not testable with adequate power, preliminary evidence does suggest that Iqmik users believe their product of choice is less harmful than users of cigarettes and commercial chew. Focus group participants provided a possible explanation for this difference when they noted that users of Iqmik often see the substance as more “natural” because they know the ingredients, having made it themselves. Also, participants said that less is known about the health risks of Iqmik because it is regional: “There’s less talk of it on TV and stuff.” In contrast, the ingredients in commercial chew and cigarettes are unknown to users, and the negative health effects of these substances are researched and widely understood through advertising and other media.

Our hypothesis that a higher proportion of Alaskan women would use spit tobacco than men was not supported. Interestingly, this discussion played out in our focus group. Some participants endorsed views consistent with our hypothesis while others argued that

men and women use tobacco in similar ways. Our results suggest that, in this population, it is incorrect to assume that women are more likely to chew than men.

Results from earlier qualitative work indicated that Alaska Natives believe adult women are more likely to chew Iqmik than adult men (Renner, et al., 2004). Thus, the lack of difference in spit tobacco use among males and females in our sample may be related to the fact that our “spit tobacco” variable included both Iqmik and commercial chew. A larger sample would be necessary examine gender differences in use of each substance. Tobacco use patterns among younger, college-going Alaska Native adults may differ from those of other Alaska Natives in that gender differences may be minimized. Finally, it is possible that gender differences in patterns of use may vary by community, family or peer group, possibly accounting for the differences in opinion among focus group participants.

Developing Interventions to Reduce Tobacco Use among Alaska Native College Students

At the national level, efforts are being made to reduce health disparities between ethnic groups in the United States. Native American people use tobacco at higher rates than non-Native people, and correspondingly, they are more likely than non-Native people to die from tobacco-related illnesses such as cancer and heart disease. Thus, implementing interventions aimed at reducing tobacco use among Native American people seems a clear way to achieve the objective of reducing health disparities. However, interventions developed at a national or even state level are likely to fail, as they do not take into account the diversity of tobacco use patterns and tobacco-related beliefs found in different Native American communities. For example, the results described in this paper suggest that tobacco interventions not informed by an

understanding of Iqmik use would be unlikely to be effective in the Y-K Delta region of Alaska. Research at the regional and community level is crucial to the development of appropriate interventions for specific Native American groups.

Among non-Native people, it seems that the college years (or young adulthood) may be a time when lifelong patterns of tobacco use are established. College-aged individuals may progress from occasional social smoking to regular smoking during these years. Researchers are currently testing large-scale interventions with non-Native college students aimed at reducing their tobacco use and stopping the progression from occasional to regular smoking. However, it is not clear whether those interventions would be appropriate or effective with unique groups of Native American college students.

This research explored attitudes towards possible intervention tactics by surveying Alaska Native and American Indian college students. Also, a focus group seeking feedback on possible interventions was carried out with Alaska Native students. Survey data revealed similar preferences for interventions in the Alaska and Montana samples. Both groups preferred to get help from friends and family or a medical provider, and both groups tended not to be interested in help from faculty or staff at their college. In Alaska, focus group participants explained that their reluctance to seek help from college personnel stemmed from concerns about confidentiality and about faculty members viewing them in a negative light. Interestingly, focus group participants tended to view their college's staff and faculty as being "in the dark" about the extent of their tobacco use. These responses suggest that interventions to help Alaska Native college students stop using must be viewed as non-judgmental and may benefit from facilitation by a peer leader or an individual not associated with the college.

A substantial number of Alaska and Montana survey participants preferred that the person helping them to quit share their ethnic background. Although participants expressing this preference represent a minority of survey respondents, interventions may be effective with more students if Native American people are involved in the delivery of interventions. At a minimum, interventionists should be aware of the potential impact of their own ethnic background on the intervention's attractiveness or effectiveness with Native students, and if possible, should encourage open and respectful discussion of these concerns.

Focus group participants in Alaska expressed enthusiasm for potential interventions that would utilize interactive web-based technologies or that involved social interaction. Anecdotally, "instant messaging" is a favorite pastime of many students on the Y-K Delta (as it likely is in other places), allowing students to remain closely connected with networks of family and friends across the area (where travel is difficult and phone contact is expensive). These activities are conducted using computers rather than using cell phone "texting," as most of the area does not have cellular service. Participants felt that they would enjoy and use a service that allowed them to communicate with and draw support from an interventionist via these means. They also expressed interest in interventions that brought them together with students with similar needs and interests in a confidential setting.

Some Alaska Native focus group participants expressed beliefs about tobacco use not supported by research. Some participants shared the expectation that smoking may be a "male" activity and chewing more associated with females. Although data in other studies has supported the idea that women may use spit tobacco at higher rates than men,

data in this study did not find differences between Alaska Native male and female college students with respect to type or prevalence of tobacco use. Also, a few participants suggested that Alaska Native people (particularly elderly people) may persist in believing that Iqmik is less harmful because it is “more natural” than commercial tobacco products. Interventions should continue to address these misconceptions among Alaska Native college students.

Notable in our focus group was the use of humor by Alaska Native college students in describing their experiences with tobacco. Humor is an important value in Alaska Native culture (Cueva, Kuhnley, Lanier, & Dignan, 2006), and the use of humor may serve as an important coping mechanism for students struggling with multiple stressors. Interventionists working to reduce tobacco use among Alaska Native college students might maximize the effectiveness of interventions by allowing natural, culturally relevant experiences and practices such as humor to inform and enrich the process of intervention.

Also noted were both subtle and overt indications that Alaska focus group participants view spit tobacco use (especially Iqmik use) as a part of Alaska Native culture and, conversely, unacceptable in White culture. Participants overwhelmingly agreed that Native people use Iqmik “back home” in villages, with family and relatives. They emphasized that spit tobacco use was not acceptable in work environments or around their boss (possibly representing White culture in that “work” and “boss” as they currently exist were not a part of Alaska Natives’ environment prior to contact with White culture and the region’s conversion to a cash economy; Wolsko, et al., 2006). Interventionists working with Alaska Native college students must be particularly

sensitive to the ways in which changing tobacco use behaviors, while improving health, might cause discomfort to students in the context of their culture, as the loss of those behaviors may be viewed as placing in jeopardy vitally important familial and community bonds.

In summary, interventions to help students in the study populations stop using tobacco should involve social interaction (either in-person or, possibly, web-based), should be confidential and non-judgmental, should seek to correct misconceptions about the use and harm potential of tobacco substances, should involve indigenous personnel when possible, and should integrate and build upon the natural strengths and coping mechanisms that exist within the culture.

Ongoing Partnerships and Development of Sustainable Research Programs

An important aspect of this and other research conducted in collaboration between tribal communities and “outside” researchers are the relationships built between researchers and communities and the ability of those relationships to grow sustainable research programs that continue to benefit the community. Throughout this project, care has been taken to facilitate those relationships by involving the research sites in every step of the process. The research team sought feedback from community members in developing research protocols, requested and received approval for the study from campus leadership, involved individuals from the campus in data collection, and provided (and continues to provide) results to the sites in the form of written reports and classroom presentations. These efforts were viewed as vital to the relevance and importance of the research being conducted. In short, the team was committed to making this research useful to the study sites. It is also important that this research continues to grow and

generate information that can be used by study sites to positively impact the health status of their students. A description of the potential for sustaining ongoing research partnerships follows.

At the Alaska site, this author embarked on this study already having close connections with college faculty, staff and students; she has previously been a student and employee at that campus, and expects that continued collaborations with the campus will occur (as she is returning to live and work permanently in the community where research was conducted). At the site in Montana, collaborators from The University of Montana and the tribal college site have continued to build upon the survey results gathered for this project. The research mentor (Harris), a graduate student who resides near the tribal college, and a tribal college undergraduate student collaborated to carry out two focus groups with students at the tribal college with the primary aim of gathering feedback about the acceptability of potential intervention strategies. Results from those groups are being analyzed, and will be used to develop an intervention that will be tested via pilot research. Eventually, the research team members would like to expand their focus to multiple tribal colleges in the area. Importantly, the tribal college student involved in this work has gone on to secure funding for her own research training in the form of a competitive minority supplement to Dr. Harris's R01 grant. That student is now being mentored and receiving training for possible graduate study in public health, with the eventual goal of returning to her community with the skills and training necessary to conduct research that will benefit her community. Thus, the collaborations initiated to conduct this study continue to thrive, and our hope is that the tribal college community will continue to benefit from the ongoing research activities of this team.

Limitations

This research has several limitations. First, the size of our sample of Alaska Native college students on the Y-K Delta is small, being necessarily limited by the small size of the student population at the college. This research retained a focus on a specific population with the intention of developing interventions that are appropriate for that population and, unfortunately, that limited our ability to detect differences within the population. Also, the substantial proportion of students using multiple forms of tobacco prevented the use of all data from multiple-product users in statistical tests assuming independent samples. These considerations prevent us from drawing firm conclusions about gender differences in patterns of use, perceived harm of different tobacco products, and motivation to quit different tobacco products within that sample. This research would have benefited from obtaining ratings of product harm from all survey respondents, not only product users.

A related concern is the potential usefulness of research conducted with such a small and specific population. The Alaska results cannot be generalized to Alaska Native college students in other regions of the state, or to Alaska Natives on the Y-K Delta not attending college. Similarly, in Montana, survey results cannot be generalized to all tribal college students, to American Indian college students in other states, or to American Indian adults in the region not attending college. However, this research has the potential to improve the health status of the communities and regions where the research was conducted. In the Y-K Delta, a limited number of Alaska Native youth attend college (although college attendance for this population is increasing year by year). In the future, students attending college will be leaders within their communities. Their tobacco use

patterns will serve as an example to their families and wider communities. Furthermore, this research may inform subsequent investigations of tobacco use among Alaska Native college students attending school in Anchorage, Fairbanks, or other parts of the state, where interventions to reduce tobacco use among Alaska Native students are also scarce and badly needed.

At both sites, sampling methods introduced the potential for bias. In Montana, our sampling methods may have involved bias related to systematic differences existing between those students within the classes who completed the surveys and those who did not, and those students attending and not attending class. Unfortunately, obtaining a true random sample of Montana students was not feasible, as a more significant response bias was expected had random sampling of individuals been attempted. In Alaska, sampling methods were varied and largely informal, as the researcher sought increase the number of Alaskan participants by attempting to recruit every possible on-campus student. Students spending less time “hanging out” at the campus and students not attending class were less likely to be recruited for this study. Also, and again, systematic differences may exist between students agreeing to participate and those not participating in both the survey and focus group.

Time constraints and low participant interest prevented the researcher from carrying out multiple focus groups. However, qualitative findings at the Alaska site would have been enriched and strengthened had multiple groups been conducted. Gathering data from multiple groups increases the likelihood that diverse views will be represented, and gives strength to the conclusions drawn based on qualitative data.

The comparison between Alaska Native and American Indian college students is somewhat complicated to interpret because the samples are not culturally homogeneous. Although results for participant tribal background are not reported to protect confidentiality, those results revealed substantial heterogeneity in participants' backgrounds. However, it should be noted that heterogeneity of the Alaska and Montana groups should have decreased our ability to find differences between those groups. Thus, the significant differences found between the Alaska Native and American Indian samples with respect to ceremonial tobacco use and spit tobacco use lend even stronger support to the idea that these two groups (and other regional groups) should be considered separately for the purposes of research.

Recommendations for Future Research

Future research in tobacco use among Native American college students will benefit from a continued focus on regional or community populations, to document the differences and similarities that exist in the needs of Native American college students. Researchers might also expand their focus to include Native young adults enrolled in non-traditional training or not attending school. As data from heterogeneous groups accumulates, researchers should seek to determine whether common needs and preferences exist across subgroups of Native Americans.

Regional data should be used to develop and test interventions to help Native college students who want to stop using tobacco. Interventions developed on the basis of data gathered regionally, if tested and proven effective for Native college students in that region, might be altered to increase their appropriateness for students with other

backgrounds and re-tested in diverse contexts. Regional and community-based research need not be conducted in the absence of broader contexts.

In the Y-K Delta region of Alaska, ongoing surveillance of potentially changing patterns of use should be conducted. Further exploration of questions related to culture and tobacco use might be helpful for informing hospital-based and phone-based interventions already in place and interventions yet to be developed for groups or individuals that do not access existing hospital-based or phone-based services.

Research and intervention programs working within Native communities should seek to develop sustainable collaborations with local and indigenous people. Without the involvement and commitment of community members, important research findings will fail to have a positive impact on the health status of the people of the community. Including qualitative methods in study protocols will further serve to highlight the importance of community voice and insure that the research conducted and conclusions drawn are relevant and appropriate for that community.

Conclusion

Research with small and culturally unique populations faces substantial challenges in terms of the values important within the realm of scientific inquiry. Indeed, problems with small numbers of participants, a lack of generalizability, behavioral patterns that do not “fit the mold,” and challenges related to community access and program sustainability are only some of the complexities confronted in this study alone. However, it is vitally important that rural, Native American, and other unique communities not be excluded from or overlooked by the research world.

Within the larger tobacco research world, the college years are being investigated as a time when tobacco use patterns change, and for some individuals, lifelong patterns of use may be established during these years. Interventions are being developed and tested that have the potential to change the trajectory of tobacco use and significantly improve the health status of college students over the course of their lifetimes. These interventions, developed with large populations of mostly White students, may not be appropriate or effective when used with Native American populations with unique and potentially culturally-linked tobacco use patterns. Yet some groups of Native American college students use tobacco at rates more than twice those found in national college student populations—and a pressing need exists for interventions to assist these students in changing their tobacco use patterns and developing healthier lifestyles. Research that specifically addresses the needs of these unique groups is absolutely necessary if troubling health disparities related to tobacco use are to be reduced and, eventually, eliminated.

This study is an effort to document and better understand the needs of two distinct populations of Native American college students with respect to their tobacco use. The results described herein, while not always allowing for firm and generalizable conclusions, provide relevant and potentially useful information for those who belong to and work within the communities described.

References

- Altman, D.G. (1991). *Practical statistics for medical research*. London: Chapman and Hall.
- Andresen, E.M., Malmgren, J.A., Carter, W.B., & Patrick, D.L. (1994). Screening for depression in well older adults: Evaluation of a short form of the CES-D. *American Journal of Preventive Medicine, 10*, 77-84.
- Angstman, S.E., Harris, K.J., Golbeck, A., & Swaney, G. (2008). Cultural identification and smoking among American Indian adults in an urban setting. Manuscript submitted for publication.
- Angstman, S.E., Harris, K.J., Harrar, S.W., River, E.M., & Webster, L.O. (2008). Recreational and ceremonial tobacco use among American Indian tribal college students. Poster presented at the 14th Annual Meeting of the Society for Research on Nicotine and Tobacco, Portland, OR.
- Angstman, S.E., Patten, C.A., Renner, C.C., Simon, A., Thomas, J.L., Croghan, I.T., et al. (2007). Tobacco and other substance use among Alaska Native youth in Western Alaska. *American Journal of Health Behavior, 31*(3), 249-260.
- Basch, C.E. (1987). Focus group interview: an underutilized research technique for improving theory and practice in health education. *Health Education Quarterly, 14*, 411-448.
- Beauvais, F., Thurman, P.J., Burnside, M., & Plested, B. (2007). Prevalence of American Indian adolescent tobacco use: 1993-2004. *Substance Use & Misuse, 42*(4), 591-601.

- Black, D.R., & Babrow, A.S. (1991). Identification of campaign recruitment strategies for a stepped smoking cessation intervention for a college campus. *Health Education Quarterly*, 18, 235-247.
- Blanchette, R.A., Renner, C.C., Held, B., Enoch, C., & Angstman, S. (2002). The current use *Phellinus igniarius* by the eskimos of Western Alaska, *Mycologist*, 16(4).
- Boyle, R.G., Jensen, J., Hatsukami, D.K., & Severson, H.H. (1995). Measuring dependence in smokeless tobacco users. *Addictive Behaviors*, 20(4), 443-450.
- Brown, R.A., Lewinsohn, P.M., Seeley, J.R., & Wagner, E.F. (1996). Cigarette smoking, major depression, and other psychiatric disorders among adolescents. *Child and Adolescent Psychiatry*, 35(12), 1602-1610.
- Burgess, D., Fu, S.S., Joseph, A.M., Hatsukami, D.K., Solomon, J., & van Ryn, M. (2007). Beliefs and experiences regarding smoking cessation among American Indians. *Nicotine and Tobacco Research*, 9(supp 1), S19-28.
- Caldwell, J.Y., Davis, J.D., Du Bois, B., Echo-Hawk, H., Erickson, J.S., Goins, R.T., et al. (2005). Culturally competent research with American Indians and Alaska Natives: Findings and recommendations of the first symposium of the work group on American Indian research and program evaluation methodology. *American Indian and Alaska Native Mental Health Research*, 12(1), 1-21.
- Castor, M., Smyser, M., Taulii, M., Park, A., Lawson, S., & Forquera, R. (2006). A nationwide population- based study identifying health disparities between American Indians / Alaska Natives and the general population living in urban counties. *American Journal of Public Health*, 96(8), 1478-1484.

Centers for Disease Control and Prevention. (1991). Use of smokeless tobacco among adults- United States. *Morbidity & Mortality Weekly Report*, 42(14), 263-266.

Centers for Disease Control and Prevention. (1997). Youth risk behavior surveillance: National college health risk behavior survey - United States, 1995. *Morbidity and Mortality Weekly*, 46, 1-56.

Centers for Disease Control and Prevention. (2000). State-specific prevalence of selected health behaviors, by race and ethnicity—BRFSS, 1997. *Morbidity and Mortality Weekly Report*, 49(2), 1-60.

Centers for Disease Control and Prevention (2002). Annual smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 1997-2001. *Morbidity and Mortality Weekly Report*, 51(14), 300-303.

Centers for Disease Control and Prevention (2003a). Health status of American Indians compared with other racial / ethnic minority populations—selected states, 2001-2002. *Morbidity and Mortality Weekly Report*, 52(47), 1148-1152.

Centers for Disease Control and Prevention. (2003b). Surveillance for health behaviors of American Indians and Alaska Natives: Findings from the BRFSS 1997-2000. *Morbidity and Mortality Weekly Report*, 52(SS07), 1-13.

Centers for Disease Control and Prevention (2003c). Cancer mortality among American Indians and Alaska Natives—United States, 1994-1998. *Morbidity and Mortality Weekly Report*, 52(30), 704-707.

Centers for Disease Control and Prevention (2003d). Diabetes prevalence among American Indians and Alaska Natives and the overall population—United States, 1994-2002. *Morbidity and Mortality Weekly Report*, 52(30), 702-704.

Centers for Disease Control and Prevention (2004). Prevalence of cigarette use among 14 racial/ethnic populations— United States, 1999-2001. *Morbidity and Mortality Weekly Report*, 53(3), 49-53.

Centers for Disease Control and Prevention (2007a). *Smokeless Tobacco*. Retrieved March 11, 2008 from www.cdc.gov/tobacco/data_statistics/Factsheets/smokeless_tobacco

Centers for Disease Control and Prevention (2007b). *Best Practices for Comprehensive Tobacco Control Programs*. Atlanta, GA: US Department of Health and Social Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

Chan, C.W., & Witherspoon, J.M. (1988). Health risk appraisal modifies cigarette smoking behavior among college students. *Journal of General Internal Medicine*, 3, 555-559.

Choi, W.S., Daley, C.M., James, A., Thomas, J., Schupbach, R., Segraves, M., Barnoskie, R., & Ahluwalia, J. (2006). Beliefs and attitudes regarding smoking cessation among American Indians: a pilot study. *Ethnicity & Disease*, 16(1), 35-40.

Cochran, P.A., Marshall, C.A., Garcia-Downing, C., Kendall, E., Cook, D., McCubbin, L., & Gover, R.M. (2008). Indigenous ways of knowing: Implications for participatory research and community. *American Journal of Public Health*, 98, 22-27.

- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20*, 37-46.
- Cohen, S., Kamarck, T., & Mermerlstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385-396.
- Cohen, S., & Williamson, G.M. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan & S. Oskamp (Eds.), The Social Psychology of Health. Newbury Park, CA: Sage, 1988.
- Critchley, J.A., & Unal, B. (2003). Health effects associated with smokeless tobacco use: A systematic review. *Thorax, 58*(5), 435-439.
- Cronk, N.J., Davidson, M.M., Harris, K.J., Golbeck, A.L., Catley, D., & Good, G.E. (2008). Recruitment and retention of college smokers in a group randomized trial. Manuscript submitted for publication.
- Cueva, M., Kuhnley, R., Lanier, A., & Dignan, M. (2006). Healing hearts: Laughter and learning. *Journal of Cancer Education, 21*(2), 104-107.
- Daley, C.M., James, A.S., Barnoskie, R.S., Segraves, M., Schupbach, R., & Choi, W.S. (2006). "Tobacco has a purpose, not just a past:" Feasibility of developing a culturally appropriate smoking cessation program for a pan-tribal Native population. *Medical Anthropology Quarterly, 20*(4), 421-440.
- Denny, C.H., & Taylor, T.L. American Indian and Alaska Native health behavior: findings from the behavioral risk factor surveillance system, 1992-1995. *Ethnicity & Disease, 9*(3), 403-409.

- Ebbert, J.O., Patten, C.A., & Schroeder, D.R. (2006). The Fagerstrom Test for Nicotine Dependence-Smokeless Tobacco (FTND-ST). *Addictive Behaviors, 31*, 1716-1721.
- Ehrsam, G., Lanier, A.P., Holck, P., & Sandidge, J. (2001). Cancer mortality among Alaska Natives, 1994-1998. *Alaska Medicine, 43*(3), 50-60.
- Everett, S.A., Husten, C.G., Kann, L., Warren, C.W., Sharp, D., & Crossett, L. Smoking initiation and smoking patterns among US college students. *Journal of American College Health, 48*(2), 55-60.
- Fagan, P., Moolchan, E.T., Lawrence, D., Fernander, A., & Ponder, P.K. (2007). Identifying health disparities across the tobacco continuum. *Addiction, 102*, Supplement 2, 58-64.
- Finkelstein, D.M., Kubzansky, L.D., & Goodman, E. (2006). Social status, stress, and adolescent smoking. *Journal of Adolescent Health, 39*(5), 678-685.
- Fiore, M.C., Novotny, T. E., Pierce, J.P., Giovino, G.A., Hatziandreu, E.J., Newcomb, P.A., Surawicz, T.S., & Davis, R.M. (1999). Methods used to quit smoking in the United States: Do cessation programs help? *Journal of the American Medical Association, 263*(20), 2760-2765.
- Fortuine, R. (1996). Historical notes on the introduction of tobacco into Alaska. *Alaska Medicine, 38*(1), 3-7.
- Fu, S.S., Burgess, D., van Ryn, M., Hatsukami, D.K., Solomon, J., & Joseph, A.M. (2007). Views on smoking cessation methods in ethnic minority communities: A qualitative investigation. *Preventive Medicine, 44*(3), 235-240.

- Gessner, B.D., Ussery, X.T., Parkinson, A.J., & Breiman, R.F. (1995). Risk factors for invasive disease caused by *Streptococcus pneumoniae* among Alaska Native children younger than two years of age. *Pediatric Infectious Disease Journal*, *14*(2), 123-128.
- Glassman, A.H., Helzer, J.E., Covey, L.S., Cottler, L.B., Stetner, F., Tipp, J.E., & Johnson, J. (1990). Smoking, smoking cessation, and major depression. *Journal of the American Medical Association*, *264*(12), 1546-1549.
- Harris, K.J., River, E.M., & Webster, L.O. (2008, April). Focus groups on tobacco use among tribal college students. In S.E. Angstman (Chair), Research on tobacco use among college students. Symposium presented at the 2008 Montana Spring Public Health Conference, Missoula, MT.
- Harris, K.J., Grobe, J., McCarter, K.S., Nazir, N., Gerkovich, M., & Choi, W.S. (2002). Smoking while in college: Baseline analysis from a longitudinal survey. Paper presented at the Eighth Annual Scientific Sessions for the Society for Research on Nicotine and Tobacco, Savannah, GA.
- Harris, K.J., Swaney, G., Reddies, K., BigLeftHand, R., Miller, S., Marcus, B., et al. (2004). *Missoula Indian Center Adult Tobacco Use and General Health Survey Report*. Missoula, MT: Author.
- Heatherton, T.F., Kozlowski, L.T., Frecker, R.C., & Fagerstrom, K.O. (1991). The Fagerstrom Test for Nicotine Dependence: A revision of the Fagerstrom Tolerance Questionnaire. *British Journal of Addictions*, *86*, 1119-1127.
- Hines, D., Nollen, N.L., & Fretz, A.C. (1996). One-year follow up of college student occasional smokers [letter]. *Tobacco Control*, *5*, 231.

- Hodge, F.S., & Struthers, R. (2006). Persistent smoking among Northern Plains Indians: Lenient attitudes, low harm value, and partiality towards cigarette smoking. *Journal of Cultural Diversity, 13*(4), 181-185.
- Hurt, R.D., Renner, C.C., Offord, K.P., Patten, C.A., Ebbert, J.O., Schroeder, D.R., et al. (2005) Iqmik, a form of spit tobacco used by pregnant Alaska Natives: nicotine exposure in their neonates. *Maternal-Fetal and Neonatal Medicine, 17*(4), 281-289.
- Indian Health Service. Trends in Indian Health, 1998-1999. Department of Health and Human Services, Indian Health Service. Rockville, MD: US.
- Kaplan, S., Lanier, A.P., Merritt, R.K., & Siegel, P.Z. (1997). Prevalence of tobacco use among Alaska Natives: a review. *Preventive Medicine, 26*(4), 460-465.
- Kaufman, C.E., & Ramarao, S. (2005). Community confidentiality, consent, and the individual research process: Implications for demographic research. *Population Research and Policy Review, 24*, 149-173.
- Kegler, M.C., Cleaver, V.L., & Yazzie-Valencia, M. (2000). An exploration of the influence of family on cigarette smoking among American Indian adolescents. *Health Education Research, 15*(5), 547-557.
- Koontz, J.S., Harris, K.J., Okuyemi, K.S., Mosier, M.C., Grobe, J., Nazir, N., et al. (2004). Healthcare provider's treatment of college smokers. *Journal of American College Health, 53*(3), 117-125.
- Krueger, R.A. (1994). *Focus Groups, A Practical Guide for Applied Research* (2nd ed.). California: Sage Publications.

- Kurian, A.K., & Cardarelli, K.M. (2007). Racial and ethnic differences in cardiovascular disease risk factors: a systematic review. *Ethnicity & Disease, 17*(1), 143-152.
- Lewis, T.C., Stout, J.W., Martinez, P., Morray, B., White, L.C., Heckbert, S.R., et al. (2004). Prevalence of asthma and chronic respiratory symptoms among Alaska Native children. *Chest, 125*(5), 1665-1673.
- Maxon, J., Swaney, G., Harris, K.J., Angstman, S., Marcus, B., Ferguson G, et al. (2005). Traditional usage of tobacco by Native American tribes: The ethics of research. Poster presented at The Rocky Mountain Psychological Association Annual Meeting, Phoenix, AZ.
- Mays, N., & Pope, N. (1996). *Qualitative Research in Health Care*. London: BMJ.
- Mitchell, T.L., & Baker, E. (2005). Community-building vs. career-building research: The challenges, risks and responsibilities of conducting research with aboriginal and Native American communities. *Journal of Cancer Education, 20*, 41-46.
- Mohatt, G.V., Hazel, K.L., Allen, J., Stachelrodt, M., Hensel, C., & Fath, R. (2004). Unheard Alaska: Culturally anchored participatory action research on sobriety with Alaska Natives. *American Journal of Community Psychology, 33*(3-4), 263-273.
- Montana Department of Health and Human Services (2006). The Montana American Indian Behavioral Risk Factor Surveillance System Survey: Results about commercial tobacco 2001, 2003 and 2005. Helena: MDHHS.
- Montana Legislative Council (2005). *The tribal nations of Montana*. Helena: MLC.

- Murphy, J.M., Horton, N.J., Monson, R.R., Laird, N.M., Sobol, A.M., & Leighton, A.H. (2003). Cigarette smoking in relation to depression: Historical trends from the Striling County study. *American Journal of Psychiatry, 160*(9), 1663-1669.
- National Institute of Drug Abuse (2002). Tobacco use in the 1998 National Household Survey on Drug Abuse. Retrieved August 19, 2002 from <http://www.health.org/pubs/nhsda/98hhs>.
- Nelson, D.E., Mowery, P., Tomar, S., Marcus, S., Giovino, G., & Zhao, L. (2006). Trends in smokeless tobacco use among adults and adolescents in the United States. *American Journal of Public Health, 96*, 897-905.
- Ockene, I.S., & Miller, N.H. (1997). Cigarette smoking, cardiovascular disease, and stroke: A statement for healthcare professionals from the American Heart Association. *Journal of American Health Association, 96*(9), 3242-3247.
- Oetting, E.R., Swaim, R.C., & Chiarella, M.C. (1998). Factor structure and invariance of the orthogonal cultural identification scale among American Indian and Mexican American youth. *Hispanic Journal of Behavioral Sciences, 20*(2), 131-155.
- Patten, C.A. (2008). Personal communication.
- Patten, C.A., Enoch, C., Renner, C.C., Offord, K.P., Nevak, C., Theusch, S.F., et al. (2007). Focus groups of Alaska Native adolescent tobacco users: Preferences for tobacco cessation interventions and barriers to participation. Manuscript submitted for publication.
- Patton, M.Q. (2002). *Qualitative Research & Evaluation Methods* (3rd Edition). London: Sage Publications, Ltd.

- Phinney, J.S. (2006). Acculturation is not an independent variable: Approaches to studying acculturation as a complex process. In *Acculturation and Parent-Child Relationships: Measurement and Development*. New Jersey: Lawrence Erlbaum Associates Publishers, 75-95.
- Phinney, J.S., & Alipuria, L.L. (1990). Ethnic identity in college students from four ethnic groups. *Journal of Adolescence*, *13*, 171-183.
- Presley, C.A., Meilman, P.W., & Lyerla, R. (1994). Development of the Core Alcohol and Drug Survey: Initial findings and future directions. *Journal of American College Health*, *42*(6), 248-255.
- Prokhorov, A.V., Pallonen, U.E., Niaura, R., & Prochaska, J.O. (1994). Nicotine dependence in vocational school students and adults. *Annals of Behavioral Medicine*, *16*, 115S
- Prokhorov, A.V., Pallonen, U.E., Fava, J.L., Ding, L., & Niaura, R. (1996). Measuring nicotine dependence among high-risk adolescent smokers. *Addictive Behaviors*, *21*(1), 117-127.
- Quigley, D. (2006). A review of improved ethical practices in environmental and public health research: Case examples from Native communities. *Health Education and Behavior*, *33*(2), 130-147.
- Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385-401.
- Radzius, A., Moolchan, E.T., Henningfield, J.E., Heishman, S.J., Gallo, J.J. (2001). A factor analysis of the Fagerstrom Tolerance Questionnaire. *Addictive Behaviors*, *26*(2), 303-310.

- Raveis, V.H., & Kandel, D.B. (1987). Changes in drug behavior from the middle to the late twenties: Initiation, persistence, and cessation of use. *American Journal of Public Health, 77*(5), 607-611.
- Renner, C.C., Enoch, C., Patten, C.A., Ebbert, J.O., Hurt, R.D., Moyer, T.P., et al. (2005). Iqmik: A form of smokeless tobacco used among Alaska Natives. *American Journal of Health Behavior, 29*(6), 588-594.
- Renner, C.C., Patten, C.A., Enoch, C., Petraitis, K., Offord, K., Angstman, S.E., et al. (2004). Focus groups of Y-K Delta Alaska Natives: attitudes toward tobacco use and tobacco dependence interventions. *Preventive Medicine, 38*(4), 421-431.
- Rhoades, D.A. (2006). Disparities in data for American Indians and Alaska Natives. *American Indian and Alaska Native Mental Health Research, 13*(1), 70-74.
- Schleicher, H.E., Harris, K.J., & Campbell, D.G. (2008). Recruitment of college student participants in a mood management smoking cessation intervention. Poster presented at 14th Annual Meeting of the Society for Research on Nicotine and Tobacco, Portland, OR.
- Schleicher, H.E., Harris, K.J., Catley, D., Hall, S., & Nazir, N. Validation of a brief smoking consequences questionnaire for college students. *Nicotine and Tobacco Research*, in press.
- Sekiguchi, E., Guay, A.H., Brown, L.J., & Spangler, T.J. (2005). Improving the oral health of Alaska Natives. *American Journal of Public Health, 95*, 769-773.
- Shadish, W.R., Cook, T.D., & Campbell, D.T. (2002) *Experimental and Quasi-experimental Design*. Boston: Houghton Mifflin.

- Strauss, A., & Corbin J. (1998). *Basics of Qualitative Research*. California: Sage Publications.
- Swaney, G., & Harris, K.J. (2004). Understanding tobacco use from a Native American tribal college student perspective: A preliminary qualitative study. Poster presented at the 38th annual convention of the Association for the Advancement of Behavior Therapy, New Orleans, LA.
- Tercyak, K.P., & Audrain, J. (2002). Psychosocial correlates of alternate tobacco product use during early adolescence. *Preventive Medicine, 35*, 193-198.
- Thomas, J.L., Ebbert, J.O., Patten, C.A., Dale, L.C., Bronars, C.A., & Schroeder, D.R. (2006). Measuring nicotine dependence among smokeless tobacco users. *Addictive Behaviors, 31*, 1511-1521.
- Unger, J.B., Shakib, S., Cruz, T.B., Hoffman, B.R., Pitney, B.H., & Rohrbach, L.A. (2003). Smoking behavior among urban and rural Native American adolescents in California. *American Journal of Preventive Medicine, 25*(3), 251-254.
- Unger, J.B., Soto, C., & Baezconde-Garbanati, L. (2006). Perceptions of ceremonial and non-ceremonial uses of tobacco by American Indian adolescents in California. *Journal of Adolescent Health, 38*(4), 9-16.
- US Department of Health and Human Services (1989). Reducing the health consequences of smoking—25 years of progress: A report of the surgeon general. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. DHHS Pub No. 89 (8411).
- US Department of Health and Human Services (1998a). Tobacco Use Among U.S. Racial/Ethnic Minority Groups—African Americans, American Indians and

Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics: A report of the surgeon general. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

US Department of Health and Human Services (1998b) National Survey Results on Drug Use from The Monitoring the Future Study, 1975-1997, Volume II College Students and Young Adults.

US Department of Health and Human Services (2000). *Healthy People 2010* (2nd ed.). Washington, DC: Government Printing Office.

US Department of Health and Human Services (2004). The health consequences of smoking: A report of the surgeon general. Atlanta: Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

Walsh, M.M., Hilton, J.F., Masouredis, C.M., Gee, L., Chesney, M.A., & Ernster, V.L. (1999). Smokeless tobacco cessation intervention for college athletes: Result after 1 year. *American Journal of Public Health, 89*, 228-234.

Waters, K., Harris, K.J., Waigandt, A., Nazir, N., & Hall, S. (2006). Characteristics of social smoking among college students. *American Journal of College Health, 55*(3), 133-139.

Wechsler, H., Dowdall, G.W., Davenport, A., & Castillo, S. (1995). Correlates of college student binge drinking. *American Journal of Public Health, 85*(7), 921-926.

Winter, J.C. (2000). *Tobacco use by native North Americans: Sacred smoke and silent killer*. Norman, OK: Oklahoma University Press.

Wolsko, C., Lardon, C., Hopkins, S., & Ruppert, E. (2006). Conceptions of wellness among the Yup'ik of the Yukon-Kuskokwim Delta: The vitality of social and natural connection. *Ethnicity and Health, 11*(4), 345-363.

Table 1: Participant Demographic Characteristics

Survey Participant Demographics

	MT Full (<i>n</i> = 126)	MT Select (<i>n</i> = 105)	AK Full (<i>n</i> = 77)	AK Select (<i>n</i> = 68)
Age (<i>m, sd</i>)	29.8, 10.2	29.6, 10.7	27.5, 10.7	27.0, 10.1
Gender (female, %)	61.9	62.9	64.9	67.6
NA Ethnicity (%)	83.3	100.0	88.3	100.0
Alone	66.7	80.0	71.4	80.9
In Combination	16.7	20.0	16.9	19.1
White Ethnicity (%)	14.3	0.0	9.1	0.0
Enrollment (full time, %)	95.2	96.2	77.9	76.5
Year in school				
First, %	37.3	34.3	37.7	36.8
Second, %	30.2	32.4	32.5	32.4
Third, %	18.3	18.1	20.8	22.1
Fourth, %	4.0	3.8	3.9	2.9
Fifth or more, %	10.3	11.5	5.2	5.9
Tribally enrolled, %	64.3	77.1	76.6	86.8
Single, never married, %	61.1	61.0	71.4	72.1
Has children, %	68.3	69.5	40.3	42.6
Lives on campus, %	17.7	15.5	49.4	48.5
Employed full-time, %	14.3	23.8	31.2	30.9
Employed part-time, %	26.2	13.3	18.2	16.2

Table 2: Participant Tobacco Use Status

Recreational Tobacco Use, By Site

	MT Sample (<i>n</i> = 105)	AK Sample (<i>n</i> = 68)
Tobacco user (%)	54.3	63.2
Comm. Chewer (%)	8.6	20.6
Smoker (%)	51.4	50.0
Iqmik user (%)	0	19.1
Ever tried tobacco (%)	93.3	89.6
Tried chew (%)	53.3	60.3
Tried cigarettes (%)	89.5	86.8
Tried Iqmik (%)	1.9	54.4

Table 2: Participant Tobacco Use Status, Continued

	MT Tobacco Users (<i>n</i> = 57)	AK Tobacco Users (<i>n</i> = 43)
Age of initiation (<i>m, sd</i>)	13.2 (4.6)	13.3 (5.6)
First use = cigarettes (%)	80.7	44.2
First use = chew (%)	19.3	37.2
First use = Iqmik (%)	0	18.6
Past attempts to quit (%)	94.7	76.7
Past quit attempts > 5 (%)	54.4	11.6
Know of resources to quit	73.7	83.7
Uncertain of resources to quit	22.8	11.6
Would quit with help from:		
Friends and family (%)	66.7	65.1
Medical provider (%)	50.9	51.2
Elder (%)	14.0	9.3
Mental health (%)	12.3	9.3
College staff (%)	10.5	7.0
Ethnicity of person helping:		
Prefer same ethnicity (%)	26.3	20.9
Prefer different ethnicity (%)	3.5	0
Does not matter (%)	68.4	74.4

Table 2: Participant Tobacco Use Status, Continued

	MT Smokers (<i>n</i> = 49)	MT Chewers (<i>n</i> = 8)	AK Smokers (<i>n</i> = 34)	AK Chewers (<i>n</i> = 19)
Daily user (%)	55.6	22.2	79.4	42.1
FTND (<i>m, sd</i>)	1.7 (1.9)	N/A	1.2 (1.5)	N/A
FTND-ST (<i>m, sd</i>)	N/A	1.7 (2.3)	N/A	1.4 (1.7)
Calms when angry (%)	64.8	11.1	64.7	31.6
Calms when nervous (%)	64.8	11.1	50.0	36.8
Relaxes when irritable (%)	66.7	11.1	55.9	42.1
Helps cope when upset (%)	63.0	11.1	44.1	26.3

Table 3: Participant Psychosocial Characteristics

Survey Participant Psychosocial Characteristics, By Site

	MT Sample (<i>n</i> = 105)	AK Sample (<i>n</i> = 68)
Depression score (<i>m, sd</i>)	9.5 (5.6)	6.6 (4.3)
Elevated depression (CES-D > 10; %)	41.0	17.6
Perceived Stress score (<i>m, sd</i>)	18.4 (6.6)	14.4 (5.4)
Summed identification scores (range 1-24)		
Native American (<i>m, sd</i>)	18.4 (4.6)	19.4 (4.4)
White American (<i>m, sd</i>)	16.0 (4.9)	17.9 (4.1)
Orthogonal Cultural Identification		
Bicultural, %	38.1	52.9
Integrated, %	7.6	7.4
Separated, %	14.3	8.8
Marginalized, %	6.7	2.9
Ceremonial tobacco use		
Tribe uses, %	91.4	0
Family uses, %	57.1	0
Individual uses, %	48.6	0

Table 4: Analysis within Alaska Sample

Chi-Squared Analysis of Spit Tobacco Use Status by Gender

	User	Non-User	Total
Male	7	14	21
Female	11	35	46
Total	18	49	67

$\chi^2 = .651, df = 1, p = .420$

Table 5: Analyses of Difference between Alaska and Montana

Chi-squared Analysis of Spit Tobacco Use by Site

	ST User	Non-User	Total
Alaska	19	49	68
Montana	9	96	105
Total	28	145	173

$\chi^2 = 11.42, df = 1, p < .05$

Chi-squared Analysis of Ceremonial Tobacco Use by Site

	Ceremonial	No Ceremonial	Total
Alaska	0	68	68
Montana	51	54	105
Total	51	122	173

$\chi^2 = 46.85, df = 1, p < .05$

Appendix A: Survey

COLLEGE STUDENT TOBACCO USE SURVEY

Note to participant: In this survey, you will be questioned about your use of tobacco products. We understand that many people use tobacco in a ceremonial or spiritual way. However, unless a question asks specifically about your ceremonial or spiritual tobacco use, we use the term "tobacco use" to mean the recreational (non-ceremonial) use of tobacco. Please don't hesitate to ask the researcher if you have any questions. Thank you so much for completing this survey.

1. Gender:
 Male
 Female
 Transgendered
2. Age in years: _____
3. What is your ethnic background? (check all that apply)
 Athabaskan
 Inupiat
 Yup'ik
 Cup'ik
 Salish
 Kootenai
 Blackfeet
 Pend d'Oreille
 Sioux
 Cree
 Crow
 Caucasian (White)
 Other, please specify: _____
4. Are you an enrolled tribal member or corporation shareholder?
 Yes, please specify tribe or corporation: _____
 No
5. What is your current relationship status:
 Single
 Married
 Separated
 Divorced
 Widowed
6. Do you attend college full or part time?
 Full Time
 Part Time
7. What year of college are you attending?
 First
 Second
 Third
 Fourth
 Fifth
 Sixth or more
8. Besides English, what languages do you speak?

9. Besides English, what languages do you understand?

10. Besides English, what languages do you read and write?

11. When attending school, what is your living situation?
 Dormitory
 Other campus housing (e.g., family apartment)
 Living in off-campus home near college (e.g., within 25 miles)
 Living in off-campus home far from college (e.g., more than 25 miles away)
12. Are you currently employed?
 Yes, part-time
 Yes, full-time
 No
13. Do you have children?
 Yes, how many: _____
 No

14. Number of adults in your home: (other than yourself)

15. Number of children in your home:

16. How many of your close friends smoke?

17. How many of your close friends chew tobacco?

18. How much time do you spend with people your age who either smoke or chew tobacco?
 Never
 Not much time at all
 Some of the time
 Almost all of the time
 Nearly all of the time
19. Excluding yourself, does anyone in your home now smoke cigarettes?
 Yes, who (father, sister, etc.): _____
 No
20. Excluding yourself, does anyone in your home now chew tobacco?
 Yes, who (father, sister, etc.): _____
 No
21. Does your tribe use tobacco for ceremonial or spiritual purposes? (e.g. for prayer, offering, etc)
 Yes
 No
22. Does your family use tobacco for ceremonial or spiritual purposes?
 Yes
 No
23. Do you use tobacco for ceremonial or spiritual purposes?
 Yes
 No
24. If you use tobacco for ceremonial or spiritual purposes, about how often do you engage in those practices?
 Never
 About once a day
 About once a week
 About once a month
 Less than once a month

25. For each of the following products, mark the appropriate line.

Mark the line for each tobacco product you have ever tried.

Answer these for each product you have ever tried.

	Use in last 30 days?		On how many days out of the last 30 did you use?
	Yes	No	
<input type="checkbox"/> Tried cigarettes (even a puff)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Tried commercial chewing tobacco (like Copenhagen)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Tried Iqnik (a mixture of punk ash and commercial leaf tobacco)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. Over the past 30 days, about how much of each of the following products, on average, did you use per day?

	None	1	2 to 5	6 to 10	11 to 19	20 or more
Iqnik chews per day	<input type="checkbox"/>					
Commercial chews per day	<input type="checkbox"/>					
Cigarettes per day	<input type="checkbox"/>					

27. Over the time you were using each of these products the heaviest, about how much of each product, on average, did you use per day?

	None	1	2 to 5	6 to 10	11 to 19	20 or more
Iqnik chews per day	<input type="checkbox"/>					
Commercial chews per day	<input type="checkbox"/>					
Cigarettes per day	<input type="checkbox"/>					

28. Currently, what type of tobacco do you mainly use?

- Iqnik
 Copenhagen or other commercial chew
 Cigarettes

29. At what age did you first try any tobacco product?

30. Which tobacco produce did you try first?

- Iqnik
 Copenhagen or other commercial chew
 Cigarettes

31. How many serious attempts have you made at stopping your tobacco use?

- None
 1
 2 to 5
 6 to 10
 11 to 19
 20 or more

32. Since you started using tobacco, what is the longest time you have gone without using any tobacco product?

- Never gone without
- Less than a day
- 1 to 30 days
- 1 to 5 months
- 6 to 11 months
- 1 year or more

33. If you wanted to stop using tobacco, would there be resources available to help you?

- Yes, I know of resources to help me quit tobacco
- Yes, I think there are resources to help me quit, but I don't know what they are
- No, there are not resources available to help me quit.

34. If you wanted to stop using tobacco, from which of the following sources would you like to receive help with quitting? (mark all that apply)

- Family and friends (informal support)
- A doctor or other medical provider
- An elder
- A mental health professional (e.g., counselor or therapist)
- Staff or faculty at my college

35. Which of the following is *most true* for you?

- I would prefer to get help to quit tobacco by someone of my own ethnic background.
- I would prefer to get help to quit tobacco by someone of another ethnic background
- The ethnic background of the person helping me quit tobacco does not matter to me.

Remember that for the following questions, the terms "cigarette use" and "chewing tobacco use" refer to the non-ceremonial use of tobacco.

36. For each of the following statements, please circle "T" (true) or "F" (false) to show whether or not the statement is true for you:

If you use cigarettes:

- T F When I am angry, a cigarette can calm me down.
- T F Smoking calms me down when I feel nervous.
- T F If I am feeling irritable, a smoke will help me relax.
- T F When I am upset with someone, a cigarette helps me cope.

If you use chewing tobacco (commercial chew or Iqnik):

- T F When I am angry, a chew can calm me down.
- T F Chewing calms me down when I feel nervous.
- T F If I am feeling irritable, a chew will help me relax.
- T F When I am upset with someone, a chew helps me cope.

If you have smoked cigarettes one or more times in the last 30 days, please answer the following questions about your cigarette use:

37. Are you motivated to quit using cigarettes?
 Yes
 No
38. On a scale of 1 (Low Motivation) to 10 (High Motivation), how motivated are you to quit smoking?
Low 1 2 3 4 5 6 7 8 9 10 **High**
39. Do you believe cigarettes are harmful?
 Yes
 No
40. On a scale of 1 to 10, how much do you think a person risks physically harming themselves if they smoke cigarettes?
Low 1 2 3 4 5 6 7 8 9 10 **High**
41. How soon after you wake up do you smoke your first cigarette?
 Within five minutes
 6-30 minutes
 31-60 minutes
 After 60 minutes
42. Which cigarette would you hate to give up?
 First cigarette in the morning
 Any others
43. Do you find it difficult to keep from smoking in places where it is forbidden? (e.g., class)
 Yes
 No
44. Do you smoke if you are so ill that you are in bed most of the day?
 Yes
 No
45. Do you smoke more during the first 2 hours of the day than you do the rest of the day?
 Yes
 No

If you have used commercial chew (like Copenhagen) one or more times in the last 30 days, please answer the following questions about your chew use:

46. Are you motivated to quit using chew?
 Yes
 No
47. On a scale of 1 to 10, how motivated are you to quit chewing?
Low 1 2 3 4 5 6 7 8 9 10 **High**
48. Do you believe chew is harmful?
 Yes
 No
49. On a scale of 1 to 10, how much do you think a person risks physically harming themselves if they chew?
Low 1 2 3 4 5 6 7 8 9 10 **High**

If you have used Iqnik (blackbull) one or more times in the last 30 days, please answer the following questions about your Iqnik use:

50. Are you motivated to quit using Iqnik?
 Yes
 No
51. On a scale of 1 to 10, how motivated are you to quit using Iqnik?
Low 1 2 3 4 5 6 7 8 9 10 **High**
52. Do you believe Iqnik is harmful?
 Yes
 No
53. On a scale of 1 to 10, how much do you think a person risks physically harming themselves if they use Iqnik 5 times a day?
Low 1 2 3 4 5 6 7 8 9 10 **High**

If you have used commercial chew (like Copenhagen) or Iqmik one or more times in the last 30 days, please answer the following questions about your chew use:

54. How soon after you wake up do you first use chew?
 Within 5 minutes
 6-30 minutes
 31-60 minutes
 After 60 minutes
55. How often do you intentionally swallow tobacco juice?
 Always
 Sometimes
 Never
56. Which chew would you hate to give up most?
 The first one in the morning
 Any other
57. How many cans of chew per week do you use?
 More than 3
 2-3
 1
58. Do you chew more frequently during the first hours after waking up than during the rest of the day?
 Yes
 No
59. Do you chew if you are so ill that you are in bed most of the day?
 Yes
 No

The following questions ask how close you are to different cultures. For each culture, please put an X in the appropriate box. The term "Native American" refers to all Alaska Native and American Indian cultures.

60. Some families have special activities or traditions that take place every year at particular times (such as holiday parties, special meals, religious activities, trips or visits). Thinking about the family that raised you, how many of these special activities or traditions did your family have that are based on...

	A lot	Some	Not much	None
The Native American culture				
The White-American culture				
Other culture, SPECIFY CULTURE:				

61. As an adult with your own family or friends, do you do special things together or have special traditions that are based on...

	A lot	Some	Not much	None
The Native American culture				
The White-American culture				
Other culture, SPECIFY CULTURE:				

62. Does your family live by or follow...

	A lot	Some	Not much	None
The Native American way of life				
The White-American way of life				
Other way of life, SPECIFY WAY OF LIFE:				

63. Do you live by or follow...

	A lot	Some	Not much	None
The Native American way of life				
The White-American way of life				
Other way of life, SPECIFY WAY OF LIFE: _____				

64. Is your family a success in...

	A lot	Some	Not much	None
The Native American way of life				
The White-American way of life				
Other way of life, SPECIFY WAY OF LIFE: _____				

65. As an adult, are you a success in...

	A lot	Some	Not much	None
The Native American way of life				
The White-American way of life				
Other way of life, SPECIFY WAY OF LIFE: _____				

The following questions are a list of ways you might have felt or behaved. Indicate how often you have felt this way during the past week.

	Rarely or none of the time, (less than 1 day)	Some or a little of the time, (1-2 days)	Occasionally or a moderate amount of the time, (3-4 days)	Most or all the time, (5-7 days)
I was bothered by things that usually don't bother me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had trouble keeping my mind on what I was doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt depressed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that everything I did was an effort.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt hopeful about the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt fearful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My sleep was restless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was happy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt lonely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I could not get "going".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following questions ask you about your feelings and thoughts during the last month. In each case, please indicate how often you felt or thought a certain way.

+	In the last month, how often have you				
	Never	Almost never	Sometimes	Fairly often	Very often
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
been upset because of something that happened unexpectedly?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
felt that you were unable to control the important things in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
felt nervous and "stressed"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt confident about your ability to handle your personal problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
felt that things were going your way?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
found that you could not cope with all the things that you had to do?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
been able to control irritations in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
felt that you were on top of things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
been angered because of things that were outside of your control?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
felt difficulties were piling up so high that you could not overcome them?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix B: Informed Consent for Survey (Alaska Version)

INFORMED CONSENT

TITLE: Tobacco Use Among Alaska Native College Students

PROTOCOL NO.: 1 F31 DA 20978-01A1

SPONSOR: National Institute on Drug Abuse

PROJECT DIRECTOR(S):

Sarah Angstman, M.A.
Department of Psychology
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Kari Harris, Ph.D., M.P.H.
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Purpose: The purpose of this research is to explore and describe tobacco use patterns among Native American college students in [community], Alaska and [community], Montana. Based on responses to these surveys, we would like to be able to describe how many Native American college students at each location use tobacco, what type of tobacco they use, how frequently they use tobacco, how and when they began tobacco use, whether they have tried to quit tobacco, and what types of characteristics go along with tobacco use. We would like to use this information to design interventions that help Native American college students who want to stop using tobacco.

Procedures: If you agree to participate in this research, you will be asked to complete a survey that asks about tobacco use and some other parts of your life. It takes about 30 minutes to complete the survey. You can fill out the survey immediately and give it back to the researcher, or you can take it with you, complete it in your spare time, and return it to the researcher or a person working with the researcher.

Payment for Participation: In exchange for participating in this study, you will be given a \$10 gift certificate to a local store. We are very grateful for your participation.

Risks/Discomforts: There is minimal risk involved in this study. However, because we are asking about your personal experiences, it is possible that some of the questions may cause you to feel uncomfortable or sad. If this happens, you can talk to the researcher about your discomfort, or you can simply choose not to answer the questions that bother you.

Benefits: Completing this survey will not benefit you directly. However, by participating in this study, you benefit future Native American college students who want to stop using

tobacco, because your answers to this survey will be used to design interventions to help those students.

Confidentiality: The survey you complete will be completely confidential. We do not want you to write your name on the survey; it will be identified only with a study number. When you have completed the survey, you will be asked to place it in a sealed envelope also marked with your study number and give it to the researcher or a person designated by the researcher. The surveys will not be viewed by anyone except the researcher and her study associates at the University of Montana. The researcher will keep all data in a locked file cabinet, and when this study is over, all of the surveys will be destroyed.

Liability Statement: Although we believe that the risk of taking part in this study is minimal, the following liability statement is required in all University of Montana consent forms:

In the event that you are injured as a result of this research you should individually seek appropriate medical treatment. If the injury is caused by the negligence of the University or any of its employees, you may be entitled to reimbursement or compensation pursuant to the Comprehensive State Insurance Plan established by the Department of Administration under the authority of M.C.A., Title 2, Chapter 9. In the event of a claim for such injury, further information may be obtained from the University's Claims representative or University Legal Counsel. © (Reviewed by University Legal Counsel, July 6, 1993)

Voluntary Participation/Withdrawal: Your decision to take part in this research is completely voluntary. If you chose to participate in the study and decide later that you do not wish to complete or turn in the survey, you may withdraw from the study without any penalty.

Questions: If you have any questions about this study either now or in the future, you may contact either Sarah Angstman or Kari Harris. Their contact information is listed at the beginning of this form.

Participant's Statement of Consent: I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will also be answered by a member of the research team. I voluntarily agree to take part in this study. I understand I will receive a copy of this consent form.

PRINT NAME: _____

SIGN NAME: _____

DATE: _____

Appendix C: Informed Consent for Survey (Montana Version)

INFORMED CONSENT

TITLE: Tobacco Use Among Alaska Native College Students

PROTOCOL NO.: 1 F31 DA 20978-01A1

SPONSOR: National Institute on Drug Abuse

PROJECT DIRECTOR(S):

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Department of Psychology
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Kari Harris, Ph.D., M.P.H.
The University of Montana
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(406) 243-4685

Purpose: The purpose of this research is to explore and describe tobacco use patterns among Native American college students in [community], Alaska and [community], Montana. Based on responses to these surveys, we would like to be able to describe how many Native American college students at each location use tobacco, what type of tobacco they use, how frequently they use tobacco, how and when they began tobacco use, whether they have tried to quit tobacco, and what types of characteristics go along with tobacco use. We would like to use this information to design interventions that help Native American college students who want to stop using tobacco.

Procedures: If you agree to participate in this research, you will be asked to complete a survey that asks about tobacco use and some other parts of your life. It takes about 30 minutes to complete the survey. Your instructor has agreed to give you class time to complete this survey. When you are finished, you can return your survey to the researcher administering the survey.

Payment for Participation: You will not receive payment for participating in this study. If you complete this survey, we will enter your name in a drawing to win one of six \$25 cash prizes. We are very grateful for your participation.

Risks/Discomforts: There is minimal risk involved in this study. However, because we are asking about your personal experiences, it is possible that some of the questions may cause you to feel uncomfortable or sad. If this happens, you can talk to the researcher about your discomfort, or you can simply choose not to answer the questions that bother you.

Benefits: Completing this survey will not benefit you directly. However, by participating in this study, you benefit future Native American college students who want to stop using

tobacco, because your answers to this survey will be used to design interventions to help those students.

Confidentiality: The survey you complete will be completely confidential. We do not want you to write your name on the survey; it will be identified only with a study number. When you have completed the survey, you will be asked to place it in a sealed envelope also marked with your study number and give it to the researcher or a person designated by the researcher. The surveys will not be viewed by anyone except the researcher and her study associates at The University of Montana. The researcher will keep all data in a locked file cabinet, and when this study is over, all of the surveys will be destroyed.

Liability Statement: Although we believe that the risk of taking part in this study is minimal, the following liability statement is required in all University of Montana consent forms:

In the event that you are injured as a result of this research you should individually seek appropriate medical treatment. If the injury is caused by the negligence of the University or any of its employees, you may be entitled to reimbursement or compensation pursuant to the Comprehensive State Insurance Plan established by the Department of Administration under the authority of M.C.A., Title 2, Chapter 9. In the event of a claim for such injury, further information may be obtained from the University's Claims representative or University Legal Counsel. © (Reviewed by University Legal Counsel, July 6, 1993)

Voluntary Participation/Withdrawal: Your decision to take part in this research is completely voluntary. If you chose to participate in the study and decide later that you do not wish to complete or turn in the survey, you may withdraw from the study without any penalty.

Questions: If you have any questions about this study either now or in the future, you may contact either Sarah Angstman or Kari Harris. Their contact information is listed at the beginning of this form.

Participant's Statement of Consent: I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will also be answered by a member of the research team. I voluntarily agree to take part in this study. I understand I will receive a copy of this consent form.

PRINT NAME: _____

SIGN NAME: _____

DATE: _____

Appendix D: Informed Consent for Focus Groups

INFORMED CONSENT

TITLE: Tobacco Use Among Alaska Native College Students

PROTOCOL NO.: 1 F31 DA 20978-01A1

SPONSOR: National Institute on Drug Abuse

PROJECT DIRECTOR(S):

Sarah Angstman, M.A.
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Purpose: The purpose of this research is to explore and describe tobacco use patterns among Native American college students. As a result of this research, we hope to gain a better understanding of the ways in which Native American college students use tobacco, and we want to access their ideas for stopping tobacco use. We hope to use this information to design interventions that will help Native American college students who would like to stop using tobacco.

Procedures: A focus group is a group of individuals led by a facilitator to explore a particular topic by discussing that topic. We are carrying out three focus groups with Alaska Native college students. If you agree to participate in this research, you will join 8-10 other students in a focus group. The group will be led by two facilitators, and they will lead a discussion among group members about tobacco use. The group will be recorded on audiotape so that we have an accurate record of group members' responses. At the start of the group, you will complete a brief questionnaire about your demographics and tobacco use patterns. The group will last approximately one and a half hours.

Payment for Participation: In exchange for participating in this focus group, you will be given a \$25 gift certificate for a local store. We are very grateful for your participation.

Risks/Discomforts: There is minimal risk involved in this study. However, because we are asking about your personal experiences, it is possible that some of the questions may cause you to feel uncomfortable or sad. If this happens, you can choose not to answer the question, or you can choose not to complete the group.

Benefits: Participating in this group will give you the opportunity to talk about tobacco use with your fellow students, possibly causing you to think about tobacco use in new ways. By participating in this study, you benefit future Native American college students who want to stop using tobacco, because your comments during the focus group will be used to design interventions to help those students.

Confidentiality: We will ask that focus group members keep confidential the things that are said in group. The data obtained in the group on audiotape will be identified with first names, but after that data is analyzed, group members' names will not be used to report findings from the focus groups. During the study, all recorded materials and study data will be kept in a locked file cabinet accessible only to the researcher and her research associates at the University of Montana. Following the completion of the study, all recorded materials and study data will be destroyed.

Liability Statement: Although we believe that the risk of taking part in this study is minimal, the following liability statement is required in all University of Montana consent forms:

In the event that you are injured as a result of this research you should individually seek appropriate medical treatment. If the injury is caused by the negligence of the University or any of its employees, you may be entitled to reimbursement or compensation pursuant to the Comprehensive State Insurance Plan established by the Department of Administration under the authority of M.C.A., Title 2, Chapter 9. In the event of a claim for such injury, further information may be obtained from the University's Claims representative or University Legal Counsel. @ (Reviewed by University Legal Counsel, July 6, 1993)

Voluntary Participation/Withdrawal: Your decision to take part in this research is completely voluntary. If you chose to participate in the study and decide you do not wish to complete or the focus group, you may leave the group without any penalty.

Questions: If you have any questions about this study either now or in the future, you may contact either Sarah Angstman or Kari Harris. Their contact information is listed at the beginning of this form.

Participant's Statement of Consent: I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will also be answered by a member of the research team. I voluntarily agree to take part in this study. I understand I will receive a copy of this consent form.

PRINT NAME: _____

SIGN NAME: _____

DATE: _____

Appendix E: Focus Group Moderator Guide

Tobacco Use among Alaska Native Students at [Campus]

MODERATORS:

Sarah Angstman
Carrie Enoch

LOCATION:

[campus, community]

SCHEDULE:

Three focus groups to be held at [campus] during the evening hours, 7:00-9:00 pm.

GROUP CONTENT AND ORGANIZATION:

Pre-Group Sign-In:

15 minutes

- Students arrive, are welcomed, and given nametags & pizza
- Students instructed to use first names only in group/on nametags
- Informed consent is given, read, and signed
- Questionnaires are given
- General orientation to schedule, and snacks/drinks available
- Students complete their surveys as they help themselves to pizza

Introduction: SARAH

2 minutes

- Explain that we may follow written text closely throughout group because we want to be sure to cover all the topics and we are holding more than one focus group
- Ask if anyone has questions regarding informed consent, questionnaire, or any other topic

Welcome: SARAH

5 minutes

Welcome/who are we?

Welcome, everyone! My name is Sarah Angstman, I am from Bethel, and I am a psychology graduate student at The University of Montana. This is Carrie Enoch, and she works to help people who want to stop using tobacco at the hospital. We are studying tobacco use and tobacco cessation strategies among Alaska Native college students.

Why you?

You have been invited to the session because you are all Native and are students at [campus]. Our team is trying to understand what the best strategies might be for helping native college students to stop using tobacco, and we need your input, experience, and expertise. Some of you may have never used tobacco, and that's fine—you probably know people who use and you may have some opinions to share about tobacco use!

Honesty/no wrong answers

It's very important that we get your honest opinions about the issues and topics during the group. Remember, there are no wrong answers to what we'll be talking about: we're interested in YOUR experience. And everyone's comments are important.

Speak clearly

To make sure we understand everybody's comments, we're audio taping the session. It will help us to understand the tape if we all talk one at a time, and if our voices are loud and clear. Please remember to use your own and others' first names only so we can protect everyone's privacy.

Speaking in Yup'ik

It is OK to speak Yup'ik in this group if you are trying to say something that is difficult to express in English—if you do speak Yup'ik, either you or Carrie will be asked to try to translate what you said into English as closely as possible so that the person transcribing the tapes can record what you said.

Confidentiality

Because this is recorded, I want to remind everyone that this is protected research and everything you say here will be kept private. Please also respect each others' privacy by not discussing our group's talk outside of group. Again, to help protect everyone's privacy, let's only use the first names you have written on your name tags.

Tobacco use

During this session, we'll talk about different types of tobacco use, including two types of spit tobacco or "chew" use: commercial chew and Iqmik. Commercial chew is any kind of chew you buy at the store, like Copenhagen. Iqmik (or blackbull) is the homemade mixture of leaf tobacco and ash that many people in this area use.

Housekeeping

We'll have a restroom/stretch break about halfway through the session in about an hour. We'll pass out the payment for your participation after the session is over.

Let's begin.

Names/Icebreaker: CARRIE**3 minutes**

We thought it would be fun to start by meeting each other. Let's go around the room and share your FIRST NAME and tell us the most interesting thing you've done in the last two weeks.

FOCUS GROUP QUESTIONS**Types of tobacco use and general tobacco use patterns: SARAH****15 minutes**

We'd like to understand how you've used tobacco in your own life, and how you see others using tobacco.

In your experience, what types of people mostly smoke? (male or female, adults or children, Native or non-Native, lots of people or a few people?)

What types of people chew commercial chew? (male or female, adults or children, Native or non-Native, lots of people or a few people?)

What types of people chew Iqmik? (male or female, adults or children, Native or non-Native, lots of people or a few people?)\

In the survey given to KUC students earlier this year, we found that 58% of students were tobacco users. Is this surprising to you, or does it sound right based on your experience? Why or why not?

In the survey given to KUC students earlier this year, we did not find a difference in how male and female students used tobacco. Does this surprise you at all? Why or why not?

Context of Use: CARRIE

Where are the places that you're most and least likely to smoke?

Where are the places that you're most and least likely to chew commercial chew?

Where are the places that you're most and least likely to chew iqmik?

What are the moods that go along with smoking for you? (when you feel down, or when you feel good; when you're anxious or studying hard for exams)

with using commercial chew?

with using iqmik?

With whom are you most and least likely to smoke?

to use commercial chew?

to use iqmik?

Pros and cons of tobacco use: SARAH

15 minutes

For you, what are the advantages of smoking? What are the disadvantages of smoking?

For you, what are the advantages and disadvantages of using commercial chew?

For you, what are the advantages and disadvantages of using Iqmik?

Do some types of tobacco have more advantages, or are they better to use, than others? Why or why not?

Iqmik preparation / use: Carrie

5 minutes

Have you mixed ash and tobacco to make Iqmik yourself? What was your experience like?

If you don't mix your own iqmik, who mixes it? Where is it mixed (Bethel? Home villages? Dorm?)

What types of plants are used to make the ash?

Where do people get the plants or ash?

Why do people use Iqmik? Are there other reasons to use Iqmik besides enjoyment / recreation?

Motivation to change: Carrie

5 minutes

We'd like to understand how you experience your tobacco use and your motivation to change or keep it the same.

How you feel about your current level of tobacco use?

Please describe for us where you'd like to be five years from now with your tobacco use.

For those of you that want to change your tobacco use, what is your motivation?

In the recent survey students at this campus completed, participants who used all types of tobacco reported being motivated to quit using, but not highly motivated (on a 1-10 scale of motivation to quit, students averaged around 6 or 7). Is this surprising to you?

Why aren't more students motivated to quit using?

About Quitting: Sarah

15 minutes

Have you ever tried to quit using tobacco? If so, can you tell us about the experience?

When you think about quitting, what kinds of things have gotten and continue to get in your way?

Please describe for us what methods you've tried to use to quit.

What are the resources come to mind when you think about trying to get help with quitting?

If you have tried to access help to quit, please describe your experiences with that.

Which seem like they would be most/least helpful to you in quitting, and why?

PROBE: Easy or hard to access? Cost?

If you've ever tried to get assistance and support from friends and family, please describe what was helpful/not helpful about that.

If you've ever tried to get assistance from health care providers, please describe your experience with that.

PROBE: what was most/least helpful, and ways in which you received help that either was/was not culturally sensitive?

In the survey we recently gave, lots of students said they might try to get help from friends, family, or a medical provider, but very few thought they would like to seek help from an elder, a mental health professional, or someone working at [campus].

WHY don't people want help from elders?

WHY don't people want help from MHP?

WHY don't people want help from [campus] faculty / staff?

Intervention delivery modes- Carrie

10 minutes

We have a few more questions about helping people to quit-- we are interested in your thoughts about the best way to reach students colleges like [campus].

What are your thoughts and feelings about getting help from....

The internet? (what about if a web page was made just for you? Or e-mail or chatting with a person who can help you?)

The phone?

In-person groups with students like you?

In-person with a student who has training to help?

In-person with professionals?

How about a combination? How often would you want help?

Other thoughts about different ways to reach college students?

Closing comments- Sarah

3 minutes

What else would you like to tell us about your tobacco use, or your quitting efforts?

Please tell us about anything else you feel is important for us to know.

Thank you for your time. We will now distribute your gift certificates.

Appendix F: Open-coded Categories for Focus Group Coding

C = Category, SC = Subcategory

1 C: Who uses tobacco

- 1A SC: Who smokes
- 1B SC: Who chews commercial
- 1C SC: Who chews Iqmik
- 1D SC: Other

2 C: Kids using tobacco

- 2A SC: Kids hiding tobacco / getting punished
- 2B SC: Kids obtaining tobacco
- 2C SC: Kids initiating use
- 2D SC: Other

3 C: Health risks of tobacco

- 3A SC: Physical effects of Iqmik use (“getting high”)
- 3B SC: Perceived safety of Iqmik relative to other products
- 3C SC: Other

4 C: Context of tobacco use

- 4A SC: Location of Iqmik use (village, Bethel, elsewhere)
- 4B SC: Chewing at work
- 4C SC: Other

5 C: Substituting one tobacco product for another

6 C: Making Iqmik

- 6A SC: Physical properties of Iqmik (like taste, smell)
- 6B SC: Obtaining Iqmik materials (including cost)
- 6C SC: Other

7 C: Group influence

- 7A SC: Alaska Native culture (including home remedies, etc. specific to culture)
- 7B SC: Use within families
- 7C SC: Peer influence on use
- 7D SC: Other

8 C: Withdrawal / Craving / Addiction

9 C: Affect

10 C: Stress / coping (must specifically mention stress; not inferred by affective descriptions)

11 C: Barriers to quitting

12 C: Motivation to quit

13 C: Quitting

- 13A SC: Methods used / seen used
- 13B SC: Intervention preferences
- 13C SC: Getting help with quitting
- 13D SC: Other