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PERCEIVED HEALTH STATUS AND NEEDS OF
ELDERS OF THE SPIRIT LAKE NATION

by

Eileen M. Tabert
Bachelor of Science in Nursing, University of North Dakota, 1982

A Thesis

submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Science

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This thesis, submitted by Eileen M. Tabert in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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ABSTRACT

Chronic disease inflicts a huge financial and collective burden on the people of this nation. Disparities in chronic disease and health risk behaviors do exist for Native Americans. The multiple disparities of the Spirit Lake Nation are identified through the use of the survey tool that was developed by the National Resource Center of Native American Aging. The quantitative descriptive study collected self-reported data related to perceived health status, behavioral risk factors, chronic disease, and other demographic information among the Spirit Lake Nation elders.

A health promotion and disease prevention model that influences self care appeared to be the most applicable for this study; thus Pender's Health Promotion model was chosen as the most appropriate. Pender's Model is multidimensional and holistic in perspective, and similar to the traditional concept of health in Native American people. Pender's Model is also based on the nature of persons interacting with their environment as they pursue health. The primary assumption is that individuals have an active role in shaping and maintaining health behaviors and modifying the environmental content for health behaviors.

Upon evaluating the data that was obtained through the survey, diabetes was identified as a chronic condition which significantly impacted on the people of the Spirit Lake Nation. Nearly 45% of the elders identified diabetes as a self-reported chronic illness (compared to 14.6% nationally). The literature indicated that diabetes is greatly

influenced by behavioral risk factors, thus diet, exercise, and nutrition have a critical impact on the disease process and/or the complications associated with diabetes.

Anecdotal information indicates that diabetes has an enormous impact on entire families at Spirit Lake. Family and community education regarding diabetes is needed in order to promote positive outcomes in the community. The “Talking Circle” model is recommended as the teaching method for education in this community. The “Talking Circle” model promotes small group community/family interactive education, promoting participant control of the learning environment in a comfortable and informal process. This process will promote an individual’s active role in shaping and maintaining their own health behaviors and promoting modification of their environment for positive health outcomes.

CHAPTER I

INTRODUCTION

Health status is not only determined by genetics, but also by environmental factors, such as health care access, culture, poverty, socio-economic status, and education. An individual's perception of his or her health or perceived health status correlates with the person's health behaviors and risk factors. Health behaviors and control of risk factors in turn, contribute greatly to the frequency of chronic disease and subsequently its management.

In the United States (U.S.), chronic disease is the number one health problem, with minority populations experiencing significantly higher incidence and prevalence of chronic disease when compared to the U.S. general population (Denny, Holtzman, & Cobb, 2003). The disparity between the health status of minority populations versus the health of the general population correlates with behavioral risk factors associated with chronic disease. Native Americans manifest shorter life expectancies and higher mortality rates related to chronic diseases (Durie, 2003). Chronic diseases, in turn, are significantly related to risk factors of smoking, poor diet, obesity, and inactivity (Denny et al., 2003).

In every society, a health culture exists and is used to define health, wellness, illness, and death. There are 562 federally recognized tribes in the U. S. (Grim 2003). Each tribe has a unique culture, language, set of health beliefs, and health practices; thus, generalizations regarding health and wellness for any particular native group are difficult.

Among many Midwest American Indian communities, health culture is based on the conceptual framework of the medicine wheel. The medicine wheel signifies the circle of life, because it encompasses the body, mind, and spirit, and is holistic in nature. Harmony with oneself and the environment is considered essential for maintaining a healthy balance in both the physical and spiritual world (Lowe & Struthers, 2001).

Culturally appropriate (as well as effective) health promotion and prevention activities among tribal communities require health care providers to have an understanding of the individual tribal communities. Cultural competency and proficiency on the part of the nurse are necessary in a world of multiple worldviews (Leininger, 1995)

Purpose

The overall purpose of this study is to identify the perceived health status as well as the health and social needs of the Native American (NA) elders of the Spirit Lake Nation (SLN). The objective was to identify possible risk factors associated with chronic diseases, based upon perceived health status and functionality of elders living in the service area of the Spirit Lake Tribal Health Program.

Background

A needs assessment had not previously been completed among the SLN elders. In this researcher's six years of working with public health among tribal elders, many unmet needs in health education, health maintenance, and home health disparities have been anecdotally noted, however, there never has been documentation of the unmet needs. Unfortunately, when systematic documentation and proof of need do not exist, then funding to provide for critical needs is also unavailable. A needs assessment is the first

step in the process of getting services to this rural reservation in the future.

Health care data for the people of the SLN is primarily collected through the Indian Health Service's (IHS) integrated computer program. The program, known as the Resource and Patient Management System (RPMS), is designed to support clinical functions of health care and includes a patient care component (IHS, 2000). The RPMS is a nation wide system that the federal government implemented within the IHS in an attempt to make service, tracking, and billing universal within the service system. The collected data is not always current, applicable, or accurate in describing the SLN elders, thus the importance of completing an elder needs assessment to determine their perception of health and health status was needed for a variety of purposes.

The National Resource Center on Native American Aging (NRCNAA) has developed a well-established survey instrument to be used as a needs assessment tool within NA elderly populations. The NRCNAA instrument is the tool that was used in completing the needs assessment of the elders of the SLN for this study. The instrument has been used with 307 tribes, 105 sites, and 10,506 elders across the nation. The goal of the NRCNAA project has been to assist tribes in collecting community level data to guide the development of long term care infrastructure. The goal of this study is to assess the SLN elder's: (A) health perceptions, (B) chronic disease rates, (C) behavioral risk factors, (D) functional limitations, and (E) social variables that relate to overall health status

A Native American elder is commonly defined as a person age 55 years and older. The age 55 years and older is considered to be comparable to those aged 65 years and over in the general United States population, due to comparable chronic disease rates between these two age cohorts (McCabe, 2002). "Baby boomers" in "Indian Country" are

now the elders and their population continues to grow due to a larger population base and improvements in medical care and knowledge. As the elders grow in number, the current funding for services will not be able to keep up with anticipated needs. The necessity of accurate data for effective health care planning is especially important due to the near doubling of the elderly population from 1990 to 2020. Tribal elders of the SLN have unique needs and are a small but important part of the whole elderly population. If their needs are met, elders should be able to function independently, for longer periods, within the comfort of their home community, which is the Spirit Lake Reservation.

One must learn the history of government influence in health care in Indian country, to begin to understand the needs and the health disparities that exist for the NA elder population. According to Burhansstipanov (1999, p. 2), there are five stages of government policy toward Native Americans: (a) Removal, characterized by the saying, “the only good Indian is a dead Indian”; (b) Reservation, characterized by the saying “kill the Indian, but save the person”; (c) Reorganization, characterized by an easing of cultural repression; (d) Termination, characterized by socio-cultural integration but also by an increase in poverty; and (e) Self-determination, characterized by increased tribal sovereignty. The reorganization and termination stages, in particular had a significant impact on the current health status of Native Americans.

The Snyder Act of 1921 authorized health services for the American Indian and Alaska Native people, and in 1955 the Indian Health Service was established (Grim, 2003). The federal government assumed a paternalistic role in the Native American world. During this time, progress included decreases in infectious disease, malnutrition, and infant mortality as well as improvements in sanitation, a safe water

supply, and supplemental food programs. Nonetheless, the U.S. government's decisions were imposed or forced on to Native Americans, creating some significant problems, misunderstandings, and mistrust between the cultures.

In 1976, the Indian Self-Determination and Education Assistance Act (PL 93-638) was passed. The law permitted local Indian people's input concerning their health care and services and allowed tribes to contract with the IHS for services that were previously performed by the government without input from local people (Grim, 2003). By involving local native people in their health care planning, IHS improved the health care delivery system, which resulted in improved health status. The life expectancy of Indian people in the U.S. has increased by 7.1 years since 1973, though it still remains 6 years less than the general U.S. population (Grim, 2003).

In 1994, further amendments were made to PL 93-638, allowing the tribes to take over the operational and administrative control of the local IHS programs (Durie, 2003). The funding to administer these programs was also transferred to the tribes. As the autonomy of the local health care system continues to evolve, delivery of culturally sensitive and respectful services continues to increase, creating health and wellness strategies that reflect the culture of the specific tribes. While every tribe's perspective of health and wellness is unique, the World Health Organization proposed the following definition that generally fits the Native American perspective:

Indigenous peoples' concept of health and survival is both a collective and an individual inter-generational continuum encompassing a holistic perspective incorporating four distinct shared dimensions of life. These dimensions are the spiritual, the intellectual, physical and emotional. Linking these four fundamental dimensions, health and survival manifests itself on multiple levels where the past, present and future co-exist simultaneously. (Durie, 2003, p. 510)

In order to create prevention and health promotion programs applicable to the Native American elder population of the Spirit Lake Nation, their perspectives of health and wellness, health care, and social needs must be identified along with any disparities that currently exist.

A commonly accepted belief is that the IHS provides health care to all Native Americans; however, IHS is under-funded by the U.S. Congress on an average of approximately 40% of the actual documented health care needs of the people (Intercultural Cancer Council, 2004). This results in the inability of many Native patients to access health care. Meanwhile, Native Americans in North Dakota continue to see an increase in the population base and the Aberdeen IHS area, which includes all the reservations in North Dakota and South Dakota (Spirit Lake being located in North Dakota), was projected to experience a 40% population increase from 1990 to 2002 (IHS, 2000). The boost in the population base, rising chronic disease rates, and increasing numbers of elders, may potentially create an increased need for already scarce health care services.

Michael E. Bird (2002) describes health disparities as being directly linked to people who have been dispossessed. Whether it is dispossession of land, labor, language, culture, or religious beliefs, all are factors in the root of health disparities. Another view related to disparities argues that the loss of sovereignty and dispossession has created an environment of material and spiritual oppression, which increases susceptibility to disease and injury (Durie, 2003). Each of these perspectives indicates a link between colonization of native people and poor health. History cannot be changed, but it also cannot be ignored. In determining needs, identifying health disparities, and in developing

programs to meet the needs of elders, the people most affected must be involved in the process, making the most of their wisdom, their strengths, and their unbelievable resiliency.

Significance of the Study

With the completion of this research study, it is now possible to follow-up on the key variables based upon the information obtained. The study identified health status and specific health conditions as perceived by the elder population of the Spirit Lake Nation. Improving the health of the elders of the SLN will require a shared, committed effort between the local community and the providers within the health care system. The data from this study has the potential to strengthen their ability to seek and obtain diverse sources of funding, to develop sustainable culturally competent health promotion, health education, and health care services. Possible avenues to pursue are discussed at length in chapter IV of this thesis

The review of the literature will focus on available information related to chronic diseases and behavioral risk factors. These topics are integrally related to the Healthy People 2010 goals of increasing years of healthy life and eliminating health disparities (United States Department of Health & Human Service, 2000) and are also related to the long-term goals of this study. Functional limitations often are obstacles to living independently. Some declines in functionality are a normal part of the aging process; however, these declines appear to be exacerbated with the presence of chronic disease (McDonald, 2003). The results of this study will be utilized to develop a plan for health promotion among Spirit Lake elders in an effort to decrease chronic disease.

Chronic Disease

Chronic disease in the NA population continues to grow in number and much of this increase can be related to behavior risk factors. Smoking, obesity, and inactivity correlate with the top three chronic diseases, which are heart disease, cancer, and diabetes in the Indian world. Native American's health status has significantly declined in the past century and much of this decline can be associated with these risk factors.

Han, Lee, Lee, and Park (2003) define chronic illness as a state of disease with irreversible pathological change that lasts longer than 3 months and eventually causes permanent disability. Additionally, "Chronic disease can be defined as a disease that is slow in its progress and long in its continuance" (Booth, Gordon, Carlson & Hamilton, 2000, p. 775). People with chronic illness require education, training, care, and sometimes rehabilitation in order to manage the long-term effects of the disease. Health promoting behaviors and self care are important for decreasing and managing chronic disease. Typically the disease can be controlled but not cured, so lifestyle continues to have a major effect on the outcome of the disease process.

Since the 1950s, morbidity and mortality attributed to infectious diseases among Native Americans have declined and chronic diseases have increased and remain an important predictor of poor health (Liao, Tucke, & Giles, 2003). Chronic disease within the Native American population has grown disproportionately in comparison to the general population over the past generation. Liao et al. (2003) reported that Native American communities have a greater burden of health risk factors and chronic disease than any other racial/ethnic minority population. The leading causes of death for Native Americans age 65 years and older are heart disease, cancer, and diabetes (Sahyoun,

Lentzner, Hoyert, & Robinson, 2001).

Cardiovascular Disease

Liao et al. (2003) defined cardiovascular disease as having one or more of the following conditions: heart attack, coronary heart disease, or stroke. The American Heart Association (AHA) (2004) reported that nearly 25% of the total deaths of Native Americans in the U. S. are from diseases of the heart and stroke. In 2001, the AHA (2004) reported that the death rates in Native American females exceeded Native American male rates, 25.4% vs. 24.4%. When the rates of coronary heart disease and cardiovascular disease are combined, approximately 1 out of 4 Native American men between the ages of 45 to 74 show some evidence of heart disease (AHA 2004). Sahyoun et al. (2001) reported heart disease as being the leading cause of death for all persons 65 years of age and older. Considering the “baby boomer” generation in Indian Country already began accessing service in 2000, one can assume these number will dramatically increase.

Liao et al. (2003) reported that the Racial Ethnic Approach to Community Health (REACH) 2010 risk factor survey was conducted during June 2001 through August 2002 in 21 minority communities in the United States. The minorities surveyed included Native Americans, African American, Hispanics, and Asians. The results of this survey indicated that Native Americans have the highest prevalence of cardiovascular disease, nearly 80% of those surveyed reported one or more, and 32% reported three or more chronic conditions or adverse risk factors.

The Strong Heart Study (SHS) included numerous studies in Indian country such as the Family Study, which consisted of 950 adult men and women in 32 extended

families living in Arizona, Oklahoma, and the Dakotas (North, MacCluer, Williams, Welty, Best, Lee, Fabsitz, & Howard, 2002) The study evaluated inherited traits for heart disease and diabetes. North et al. (2002) found evidence that genetic factors, influencing body mass index (BMI), lipids, body fat mass, and waist to hip ratio are expressed differently in people that have diabetes compared to those without diabetes. These results are important when considering diabetes type 2 rates among the NA populations, and the positive effect of increased exercise activity and improved nutritional diet, on not only overall health status, but also cardiovascular health.

The Center for Disease Control (CDC) (2000) indicated that over 62% of the Native Americans interviewed in a national survey reported having one or more of the risk factors for cardiovascular disease. Having more than one risk factor was more common among older people, people with less education, the unemployed, and those that perceived their health as fair or poor. The high percentage of Native Americans with risk factors for heart disease calls attention to the importance of primary prevention activities in their communities.

Cancer

Cancer is the second cause of death in Native Americans age 65 and older (Sahyoun, et al., 2001). Among NA people, lung cancer is the most common type of cancer, followed by colon, prostate, and female breast cancer (Gargiullo, Wingo, Coates, & Thompson, 2002), however, types of cancer vary significantly by geographic region and tribal affiliation, probably due to differences in cancer risk factors and differences in genetic susceptibility to various types of cancer. The Intercultural Cancer Council (ICC) (2004) reported that Native Americans continue to have the poorest survival from all

cancers combined, when compared to other racial/ethnic groups.

These poor survival rates are likely related to disparities in time to late diagnosis and first cancer-directed surgery or treatment. Native American women were four times more likely to receive their first cancer directed surgery more than six months after diagnosis (Wilson, Adams, Amir, Burhansstipanov, Roubidioux, Warren, Cobb, Lynch, & Key, 2000). Limited access to cancer screening and early prevention programs are also a likely indicator for poor survival rates. Additionally, obesity has been associated with poor survival rates of breast cancer and increased the risk of uterine cancer in other populations, additional studies are needed to evaluate those connections in the NA population.

The Sioux cancer study (Welty, Zephier, Schweigman, Blake & Leonardson, 1993) reported that the cancer mortality rates for the Aberdeen Area IHS are greater than U.S. rates with lung cancer being the leading cause of cancer deaths in this area. This study consisted of 1538 participants between the ages of 45 years to 74 years of age, from the Spirit Lake Nation, the Cheyenne River, the Oglala, Sioux tribes. The sample represented 55 percent of the eligible tribal membership at the time of the study. The prevalence of cancer risk was calculated using this denominator. A health risk appraisal was used to collect the data and results indicated that lung cancer in NAs exceeded the general U.S. population rates and that cervical cancer mortality was 4.4 times higher than the U.S. rates. The study related the mortality to a high incidence of smoking, alcohol abuse, sedentary lifestyle, obesity, and diabetes as well as inadequate screening and lack of accessible cancer treatments (Welty et al., 1993).

Diabetes

Native Americans suffer more from diabetes mellitus and have a higher rate of dying from the disease than any other racial or ethnic group in the U.S. (Minority Women's Health, 2003a). The prevalence of diabetes among Native Americans is more than three times that of non-Hispanic whites (Denny et al., 2003). Diabetes rates third in death rates for those Native Americans age 65 years and older (Sahyoun, et al., 2001). Analyzed data from IHS and the BRFSS by CDC indicated that diabetes continues to affect Native Americans disproportionately and is becoming more common among the younger NA population (Acton, 2003). Disabling diabetes related complications and costs are a great concern because of the increase in prevalence of diabetes type 2 among the younger people. The number of new cases of diabetes has reached epidemic proportions in both Native American men and women. Acton (2003) indicates that approximately 15.3% of adult NA's have a diagnosis of diabetes and that 30% of NAs over the age of 55 years have diabetes.

Some tribes have higher rates of diabetes than others. For example, over 50% of the Pima Indians in Arizona between the ages of 30 to 64 years have diabetes type 2 (Minority Women's Health, 2003a) and 12.7% of the Plains tribes are affected with the disease (Diabetes Program, 1998). The prevalence of diabetes is greatly underestimated because the data listed above does not represent those persons undiagnosed with diabetes and accounts for only those people that use IHS health care facilities. It does not account for approximately 40% of the NA populations who do not reside on a reservation or receive their care from IHS facilities (Acton, 2003).

Diabetes also predisposed a person to heart disease and to end stage renal disease. Diabetes was currently the leading cause of end-stage renal disease (ESRD), which has seriously increased among NAs, particularly younger NAs (National Diabetes Program, 2000).

Summary on Chronic Disease

Chronic disease inflicts a huge financial and collective burden on the people of this nation. The CDC indicates that 70% of the deaths of all Americans and 75% of this country's annual health care costs are linked to chronic disease (Hardy, 2004). The CDC describes the most common actual causes of death in the nation as smoking, poor diet, and inactivity. All of these contribute to the nation's leading killers including heart disease, cancer, and diabetes (Hardy, 2004). Efforts to decrease chronic disease are critical to increasing quality of life, decreasing medical costs and lost productivity, and strengthening our national economy.

The etiology of many modern chronic diseases is highly dependent on the environment. Environmental factors might include; desk jobs, television, technological advances, caloric dense foods, high fat foods, and car-friendly developments. All these factors favor less physical activity and increased calories and fat. As an example, only a small number of people with coronary heart disease develop the disease primarily as a result of a single genetic defect. The progression to most cases of heart disease is a combination of environmental choices that result in conditions such as hypertension, diabetes, obesity, or elevated lipids (Booth et al., 2000). According to Booth et al. (2000), 100% of the increased incidence of diabetes type 2 and obesity in the U.S. since the 1950s must be attributed to a changing environment interacting with genes, because 0%

of the human genome has changed during this time period. The presumption is, that environmental factors must ultimately be the primary cause of the increased prevalence of modern chronic diseases.

Behavioral Risk Factors

Inactivity

Physical inactivity, as defined by the Behavioral Risk Factor Surveillance System survey (BRFSS), is the process of not engaging in any exercise, recreational or physical activity, other than regular job duties during the past month (Denny, et al., 2003). Past research indicated that the average amount of physical activity has decreased over the past century and that physical exercise benefits the human body in multiple ways.

Physical inactivity has been found to be associated with chronic disease and to be a major underlying cause of premature mortality in the U.S.

Hazel and Mohatt (2001) point out that physical inactivity is physiologically abnormal, because the human body fails to function properly when there is a loss of adequate amounts of physical activity. This belief is partially supported by observations that many chronic diseases are not as prevalent in societies where physical labor is a large part of daily survival and by the evidence that chronic disease progression is delayed by the re-introduction of exercise to populations where inactivity had become the norm (Hazel & Mohatt, 2001).

In a recent prospective study of women that exercised vigorously for 1.5 hours per week or walked briskly for 3 hours per week, the risk of heart disease was reduced by 30 to 40% (Manson, Hu, Edwards, Colditz, Stampfer, Willett, Speizer, & Hennekens, 1999). Denny et al. (2003) indicated that Native Americans in the northern plains reported

inactivity at a rate of 28.8%, based on the 2000 U.S. population. Inactivity or sedentary lifestyle is a variable that highly correlates with obesity. Obesity will be discussed in more detail in the diet section as obesity is related to both inactivity and diet.

Native American ancestors lived in a physically demanding environment; they were hunters and gatherers. The lifestyle and nutritional status of NA elders has changed drastically over the past few generations, to a lifestyle that is more sedentary with a diet of high fat and low fiber, creating numerous factors that place people at risk for chronic diseases. As a result, obesity has become more prevalent and is now considered a major determinate of poor health resulting in diabetes, heart disease, arthritis, and cancer among Native populations.

Diet

Nutritional factors contribute to many of the chronic diseases of today. History depicts a very important relationship between NAs and food. In a survey conducted in 1926 by the Indian Affairs, it was reported that the most important single item affecting the health of Indians was believed to be the food supply (Jackson, 1986). Their diet was faulty in respect to quantity as well as limited in fruits, vegetables, and dairy products. Jackson (1986) reported on studies that were done in the 1960s and 1970s that described various deficiencies in NA diets, including low levels of iron, calcium, and Vitamin A, B, and C intake. They also found NAs had an increased level of low-nutrient carbohydrates (Jackson, 1986). Very little has changed in the diet consumption for NAs, except that there is even a greater intake of low-nutrient carbohydrates and an increase in high fat food. The food supplement programs provided by the U.S. government did little to improve the diet. This was all occurring during that time when there was greater

governmental control of Native people. In 1982, Title VI of the Older Americans Act began to fund tribal organizations to provide meals for the elders. In 1983, the Women, Infant and Children Supplemental Food Program began to provide services through tribal entities (Jackson, 1986). This was essentially the first effort on behalf of the government to allow tribal entities to have some control over food provided to their people. Nutrition and dietetic services have greatly improved over the past 30 years, however, there is still much work to be done and many habits to be reversed in order to improve the dietary status and in turn the health status of NAs.

Obesity correlates with diet and physical inactivity. Obesity is measured with a body mass index (BMI). BMI shows the relationship of weight to height. In general, a BMI of 30 and greater is considered to be in the obese category and a BMI of 26 to 29 is considered to be in the overweight category (Minority Women's Health, 2003b). A person with a BMI over 25 is considered to be at risk for premature death and disability from being overweight or obese. One in three Americans are overweight and one in five is obese (Hazel & Mohatt, 2001). The rate of obesity has increased drastically since 1980. In fact, from 1991 to 2000, obesity grew by sixty percent (Sturm, 2002). Health risks increase as the BMI rises. Native Americans in the BRFSS were also more likely to report obesity (23.9%) than other racial/ethnic groups (18.7%) (Denny et al., 2003).

Obesity is caused by a complex and interrelated set of individual and community factors and has been identified as a national prevention initiative by the CDC (2004). Obesity is considered to be a co-morbid factor of some chronic diseases, including diabetes type 2, heart disease, arthritis, and some types of cancer. Long-term chronic diseases are frequently predictors of functional status. Functional status relates to

independence and the ability to live without assistance of others. Functional limitations include the inability to carry out physical tasks such as stooping, lifting, or grasping without help or aids (Freedman & Martin, 2000). Functional limitations frequently precede a disability and are often associated with an increase in mortality.

Ferraro, Su, Gretebeck, Black, and Badylak (2002) reported from a twenty-year study that disability risk is higher for obese persons, especially lower body disability. Obesity in this study was defined as a BMI of 30 or greater. The presence of functional limitations, depicted as activity of daily living (ADLs) or instrumental activities of daily living (IADLs), are often obstacles to living independently. Some declines in functionality are a normal part of the aging process; however, they appear to be exacerbated with the presence of chronic disease (McDonald, 2003) and obesity (Ferraro et al., 2002).

Smoking

An estimated 46.5 million adults in the U.S. were smokers in 2000 (Trosclair, Husten & Pederson, 2002). At one time tobacco use was limited to traditional and spiritual uses in Indian country; however, social use has been escalating in recent years. Today Native Americans have the highest tobacco smoking rates in the U.S., and the Plains Indians have the highest rates overall at 44.9% (American Heart Association, 2004). Smoking prevalence was highest among persons aged 18 to 44 years and lowest in those over the age of 65 years (Trosclair et al., 2002). Lung and bronchus cancer was the greatest cause of cancer mortality among NAs in the 1990s, accounting for nearly 28% of all cancer related deaths and approximately 90% of those deaths were attributed to smoking (Gargiullo et al., 2000) The lung cancer death rates decreased substantially in

the general population during the years of 1965 to 1985, which correlated with the decrease in smoking among men from 51% to 32% during that time frame (Gargiullo et al., 2000). The increase in cancer death rates in NAs may reflect the increase in smoking rates in recent years. Smoking cessation has proven immediate health benefits but the percentage of smokers who have ever quit, is low, thus signifying the importance of culturally appropriate health education in the form of tobacco cessation programs in NA communities.

Other Variables Related to Chronic Diseases

Socioeconomic status has been documented to be a predictor of chronic disease and premature death in the U.S. (Booth et al., 2000). Income is a powerful variable that relates to the health status of individuals; NAs and minorities have substantially lower incomes than whites (Pender, Murdaugh, & Parsons, 2002). According to Pender et al. (2002) minority populations that have been poor over several generations and suffered ongoing discrimination and frustration, may feel powerless and perceive their conditions differently from recent immigrants who are poor, but are hopeful about their future.

Overall education attainment is lower in NAs. Higher risk behaviors are associated with lower educational levels and higher educational levels typically correlate with higher income (Pender et al., 2002). Higher income facilitates access to health care, a better understanding of health related information and generally better opportunities.

Health care access is a significant problem in Indian country, as there are fewer than 90 doctors for every 100,000 Indians, compared to 229 per 100,000 nationally, and Native Americans are second only to Hispanics in lacking health insurance (Wilson et al., 2000)

Furthermore, rural elderly are at greater risk for chronic disease and disability because rural elderly are more often of low socioeconomic status, more live in poverty, and have increased barriers in accessing health care services (Davis & Magilvy, 2000). Tradition and culture also continue to thrive in some rural communities and at times the remoteness of the area can shield people from (negative or positive) outside influence. According to Rosswurm (2001) many rural elders just tolerate their health conditions as they are, and may be reluctant to seek care until they are acutely ill. Rural elderly tend to be very tolerant of health complaints. They tend to be very hardy, independent, and rely on the support of family members more than anyone else. Generally, rural health care services are less accessible, more costly to deliver, narrower in scope and less in comparison to an urban area (Rosswurm, 2001).

Summary of Literature Review

There are many variables to consider when assessing health needs and perceived health status. These variables may include but are not limited to socioeconomic status, education level, rurality, and access to health care of the individual. Additional considerations from the Public Health perspective, are tobacco use, inactivity levels, and weight. These behavioral risk factors are directly linked to chronic disease rates. Smoking, inactivity, and increased weight predispose a person to cardiovascular disease. Inactivity and poor nutritional choices are linked to being overweight or obese. Increased weight and inactivity are linked to developing diabetes type 2 and other diseases. Smoking and poor nutrition are directly associated with different types of cancer. Diabetes is synonymous to cardiovascular disease, meaning if you have diabetes for any length of time, heart disease will eventually be present. Long term chronic diseases,

which are influenced by a person's weight, activity level and tobacco use, are predictors of functional limitations in aging Americans. Negative changes in behavior risk factors, such as poor diet, lack of exercise, and smoking are linked to disease and its progression. Even modest reduction in weight can have a substantial benefit in the progression of chronic illness. Positive behavior modifications influenced by culturally appropriate messages from SLN elders may assist in decreasing incidence and progression of chronic disease among the whole community and eventually the elder population.

Theoretical Framework

Disparities in health risk behaviors do exist for Native Americans, therefore a health promotion and disease prevention model that influences self care is the most appropriate model to guide this study. Pender's Health Promotion Model is multidimensional, holistic in perspective, and similar to the traditional concept of health in NA people. Pender's et al. (2002) Model is based on the nature of persons interacting with their environment as they pursue health. Pender et al. (2002) assumes that individuals have an active role in shaping and maintaining health behaviors and modifying the environmental content for health behaviors. Healthy lifestyle is a function of individual characteristics and experiences, behavior-specific cognition and affect, commitment to a plan of action, and competing demands (Pender et al., 2002). Hazel and Mohatt (2001) defined prevention as a process of maintaining one's awareness, involving oneself in activities and understandings that honor all parts of the self and the interconnections with others and the world around them.

Hazel and Mohatt (2001) also discuss the idea of wellness as being a holistic process of coming back to one's self through reliving and repairing damage done in the

domains of the physical, emotional, cognitive and spiritual. The spiritual realm is an integral component of NA culture. Spiritual development is essential for self-identity. Self-identity corresponds with a person's perception of personal health. Personal definitions of health and wellness are linked to self-care practices. Leenert, Teel, and Pendleton noted that "for some older people, perceptions or images of health may have more influence on the way they view health than does the actual medical diagnosis or the experience of living with chronic illness and functional limitations" (2002, p. 356). In other words, if a person has a positive and optimistic outlook on their health, that influences their decisions regarding risk factors and behaviors and eventually self-care attitudes and practices. The positive relationship between risk factors and chronic disease is evident among those who participate in high-risk behaviors as they tend to have higher rates of chronic disease. Health promotion activities and self-care education must be approached from an appropriate cultural perspective that includes maintaining meaningful relationships with family, friends, community, and providers.

Assumptions of the Health Promotion Model

1. "Individuals seek to actively regulate their own behavior" (Pender et al., 2002, p. 55).
2. "Individuals in all their bio-psycho-social complexity interact with the environment, progressively transforming the environment and being transformed over time" (Pender et al., 2002, p. 55).
3. "Health professionals, family, and friends constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span" (Pender et al., 2002, p. 55).

4. “Self-initiated re-structuring of person-environment interactive patterns is essential to behavior change” (Pender et al., 2002, p. 55).

Research Questions

The data collected during this study are directly relate to the purpose of identifying the perceived health status, self-reported health status, and social need of NA elders living in the service area of the Spirit Lake Tribal Health program. In addition, the data will be directly linked to the Pender Health Promotion model since the survey questions are basically reflective of the three theoretical assumptions within Pender’s theory. The chosen research questions for this study are presented below, accompanied by the related assumptions from the theoretical model.

Pender’s Assumption One

“Individuals seek to actively regulate their own behavior” (Pender et al., 2002, p. 55).

Associated research questions:

- 1-A. What preventive care practices do the elders participate in?
- 1-B. What are the behavioral health risk factors reported by the elders?

Pender’s Assumption Two

“Individuals in all their bio-psycho-social complexity interact with the environment, progressively transforming the environment and being transformed over time” (Pender et al., 2002, p. 55).

Associated research questions:

- 2-A. What is the perceived health status of the elders of the SLN?
- 2-B. What are the self-reported chronic diseases of the elders?

- 2-C. What are the self-reported functional limitations of the elders?
- 2-D. What are the hearing, vision, or dental impairments/needs of the elders?

Pender's Assumption Three

“Health professionals, family and friends constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span”

(Pender et al., 2002, p. 55).

Associated research questions:

- 3-A. What are the health care access issues of the elders of the SLN?
- 3-B. What social support factors do the elders of the SLN report?

There is also a fourth guiding Pender assumption, which relates to long-term potential outcomes from this study. The fourth assumption states, “Self-initiated re-structuring of person-environment interactive patterns is essential to behavior change” (Pender et al., 2002, p. 55). Although data collected with the study instrument will not link directly to this assumption, the study data will be useful in identifying the changes necessary to “re-structure patterns” to promote health and prevent disease.

Pender’s Health Promotion Model (HPM) will be used throughout this process of assessing, planning, and implementing a health promotion plan based on the survey results. Behavior modification must be promoted for known risk behaviors to develop culturally appropriate care and teachings for the elders of the SLN. Through these efforts, a positive change in the prevalence and progression of chronic disease may be realized.

Definitions

Native American elder: An indigenous person of the United States and tribal member of a recognized tribe that is over the age of 55 years old also called Native Indian, Indian or just Elder.

Health status: a personal perception as to individual's state of health based on a rating scale of poor, fair, good, very good, excellent

Chronic disease: a persistent, unremitting condition

Functional limitations: a physical difficulty that interferes with daily life

Health care access: ability to independently or with assistance obtain health care

Social support: a relationship that provide companionship, assistance and/or emotional help/support.

Assumptions of Study

The following assumptions are identified for this study:

1. All persons interviewed will be members of a federally recognized U.S. tribe and will reside within the Spirit Lake Tribal Health Service area, and will be 55 years of age or older.
2. All participants will answer the questions openly and honestly.
3. The survey tool will thoroughly explore the health needs of the elder of the SLN.

Limitations

1. The elders of the Spirit Lake Nation are unique in their needs and beliefs. As a result, the study findings may not be generalized to other tribes or cultures.

CHAPTER II

METHODOLOGY

The success or failure of research depends on the ability of the researcher to access the community. To this end, the Spirit Lake Tribe entered into a partnership with the National Resource Center on Native American Aging (NRCNAA) to use a survey developed for conducting Native elder needs assessments. As a Public Health Nurse for the tribe, this researcher has seen many health disparities and unmet needs among the elder community; however, no data has been available to document these disparities. My ultimate goal is to mirror the efforts of a tribal program in Montana, that used the collected data to acquire funds to develop programs to address the critical needs identified in the survey. They involved the community in the assessment, development, and the implementation of the plan.

The following chapter will describe the sample population, study design, collection methods, protection of human rights, and the analysis of the data collected during this study. In addition, this chapter will include the process that was used to successfully collaborate with the Spirit Lake Tribe on this study.

Study Design

The study was of a quantitative descriptive design. The NRCNAA's survey instrument was the primary data collection device used to gather the self-reported data. The goal was to identify risk factors associated with chronic diseases based upon

perceived health status and functionality of an elder living in the Spirit Lake Tribal Health program service area.

Population and Sample

The population consisted of all the elders of the Spirit Lake Reservation who are members of a federally recognized tribe and live in the service area of the Spirit Lake Tribal Health Program. An elder, as defined by the SLN, is a person age 55 years of age and older. The service area includes all areas within the reservation boundaries and the small communities that border the reservation, to include Devils Lake, Minnewaukan, Sheyenne, and Warwick.

A list of elders was constructed by combining elders list from a number of sources, including the Tribal enrollment office, the Title VI Elderly Nutrition Services Program, the Spirit Lake IHS Clinic, and Public Health Nursing. Once all names were entered into a database, the researcher cross referenced the names and deleted duplications. The end result was a working list of all those persons ages 55 years and older who were tribal members, residing in the Spirit Lake Tribal Health service area. This made up the population from which the randomized, representative sample was drawn.

Assistance Provided by the NRCNAA

The NRCNAA research division has done a significant amount of nationally recognized work using Native American population projections. They developed life tables that predict the number of tribal elders in ten-year age groups, beginning with the 55 to 64 year olds and ending with the 85 years and over age categories. Bu using these tables, communities are able to predict the number of elders, who will be living in

reservation communities, through the year 2020 from which the future health care needs can be made (McDonald, 2000). The 2004 population estimate for the Spirit Lake Nation was 374 persons, ages 55 years and older (NRCNAA, 2004). The constructed population list and the NRCNAA population estimate were compared. Amazingly, the constructed list was identical to the NRCNAA estimate. A random sampling formula for estimating proportions was then applied to the total elder population to determine the amount of elders needed to have a representative sample for the SLN. The result was 193 elders were required to have a representative sample. The SPSS 12.0 program was used to randomly select the required amount of elders. The population was over-sampled by 25%, in anticipation of elders not being available or refusing to participate. The total number of surveys completed for the study was 223 however, 15 surveys were unusable because of being incomplete. The result was a final sample size of 208 elders.

Data Collection Methods and Procedures

Data was collected using a face-to-face survey instrument. The survey instrument was developed by the NRCNAA for use as a needs assessment tool within Native elderly populations. The researcher and other assistants received training from the NRCNAA program to collect the data.

The researcher originally planned to send out an introduction letter to the sample population, however this was decided against, after consulting with a number of local tribal members. These local elders advised the researcher that personal contact would be a much better way of initially contacting the sample population. Once the elder's questions regarding the study were answered, a mutually agreeable time and site to complete the survey with the researcher (or an assistant researcher) was set. In many

cases, the elders were amenable to conducting the survey with the researcher at the time they were informed of the study. The time line for the surveys collected was July, 2004 through April, 2005. Native speakers were available for those elders that use Dakota as their first language; however this was not a requested service.

Survey Tool Category

Identifying Our Needs: A Survey of Elders II is the heading on the instrument (see appendix A) used in this study. The survey has a variety of questions related to health status and social environment. Categories for this researcher's study will focus on: (a) perceived general health status of the person, self-reported chronic diseases, and cancer screening care practices, (b) Activities of Daily Living and Instrumental Activities of Daily Livings as measures of functional status,(c) vision, hearing, and dental screening practices, (d) health care coverage and health access issues, (e) a risk factor assessment, that includes questions related to tobacco and alcohol use, nutrition, height, weight, and activity, (f) social support and housing arrangements, (g) demographics to include gender, age, education, income and marital status.

All the questions in the survey tool have a pre-selected set of answers, which provides the researcher with a scannable survey instrument. Upon completing the survey, the NRCNAA staff scanned all surveys and returned the data to the Spirit Lake Tribe along with comparisons representing the U.S. general counterparts. The tribe is encouraged to use the information in developing programs utilizing the survey results.

Instrument Reliability and Validity

Although the National Resource Center for Native American Aging (NRCNAA) instrument has not been psychometrically tested, 307 of the 562 federally recognized

tribes from throughout the nation have used it to develop a baseline set of data to identify, plan, and request funding for the health needs of Native elders.

Data Analysis

The survey data were tabulated and coded for analysis by the NRCNAA using National Computer Systems scanning technology to scan the surveys directly for importing into the SPSS program. Appreciation is extended to Dr. Russ McDonald at the NRCNAA, who spearheaded the assistance with this task.

The analysis was primarily descriptive statistics because of the need to have baseline data to return to the community. The descriptive statistical analysis included; frequencies, percentages, means and standard deviations. Distributions of the variables and frequencies are presented in tables, histograms and graphs in the next chapter.

Protection of Human Subjects

Approval for this study was obtained from the SLN Tribal Health Board and from the Spirit Lake Tribal Council (Tribal resolution from the Council is in Appendix B of this document). The study was conducted under the auspices of an ongoing IRB approval held for this project by the NRCNAA. Dr. Russ McDonald obtained approval from the University of North Dakota (UND) IRB to include Eileen Tabert as a researcher on the larger NRCNAA study. I completed all the requirements for educational training, completing the sixteen modules online as required through the UND graduate school.

The primary risk to participants during this study was confidentiality; however the following procedures were put into place to decrease this risk. The researcher had a master list of participant names which were checked off as surveys were completed. At the time the survey was totally completed, the survey form was placed into a large manila

envelope. There were no identifiers on any of the survey forms. The data has been completely anonymous since survey completion and throughout the data analysis process. The researcher was the only one with access to the entire list of participants. The list was kept in a locked file cabinet and will be destroyed at the end of three years. Participation in the survey process was completely voluntary and participants had the opportunity to quit at any time.

The completed survey documents from this study will be kept in a double locked room at the NRCNAA office at the University of North Dakota for a total of three years, at which time they will be destroyed. The results of the larger study will be reported as aggregate data with no linkages to any particular person or tribe. For the SLN, the data will identify existing disparities and may be used to obtain grant funds to meet critical needs existing on this rural reservation. The Spirit Lake Tribal Council gave full consent through the Tribal resolution for this study to be completed as described.

Process of Engagement

I first consulted with my immediate supervisor, the Director of Public Health Nursing and received her support to go forward with completing the needs assessment as a part of my job duties. Later, I approached the SLN Elder's Program because I knew that they had previously planned to complete the same survey at a previous time. Due to recent job vacancies in the elder office, they had not completed the survey as planned and did not foresee completing it in the near future. Upon discussing the process with the two employees in the office, they both were agreeable to assist me in meeting with elders to get the survey completed. This is an important point because their primary funding source requires that a needs assessment be completed every three years.

The next steps required in the process of implementing this study were obtaining permission from the Tribal Health Board and the Tribal Council. The Tribal Health Board meets the first Thursday of each month and I was able to get onto their agenda on April 1st, 2004. This was an informal meeting, which began with supper and followed with discussion. I had previously provided a small information packet for each of the 5 members of the Health Board, including an introduction letter, a copy of the letter that went to the Council, a copy of the memo from the Title VI program (reminding the program director of the requirement of completing a needs assessment before the end of the year in order to continue with current Title VI elderly food program monies), and a copy of the survey tool. I received the Health Board's verbal support that evening.

For Tribal Council approval, I submitted a packet of information to the Tribal Council secretary in mid- February 2004 and requested to be on their agenda for the next meeting. A meeting was to take place that week but was cancelled. I continued to be "a regular" in the tribal office asking to be placed on their agenda for their next meeting. I also met with 2 of the 5 Council members individually to explain the project and received their verbal support. The Council did meet on Friday, March 26, 2004 at the local casino meeting room. I attended that meeting and found that I was not on the agenda, but received an apology from the Council secretary and they added me to their agenda. They allowed me to explain the project briefly and then let me leave, stating they did not know how long they would be meeting, and that they did not want to hold me up. The meeting was an informal and comfortable process.

The next week I had a formally signed Tribal Resolution delivered to my office by the Tribal secretary (Appendix B). At the time of data collection, I had the support

from the Tribal Public Health Nursing program, the Tribal Health Board, and the Spirit Lake Nation Tribal Council, which indicated that the project was now allowed to move forward.

CHAPTER III

PRESENTATION OF DATA

The following chapter provides a description of the study sample and presentation of the data from the “Identifying Our Needs: A Survey of Elders II” study that was conducted with the elders of the Spirit Lake Nation in 2004-05. The data collected during this study may be directly linked to the purpose of identifying perceived health status and the self-reported health and social needs of the Native elders residing on or around the Spirit Lake Nation reservation.

The SLN elders are highly valued members of their families and their communities. The elders are recognized with respect and held in high regard for their experience and wisdom for providing guidance and direction. The goal of the SLN tribe and the health care providers is to assist the elders in seeking optimal wellness to retain the highest quality of life possible in regard to independent living.

Study Sample and Demographics

According to the information obtained from various tribal entities regarding SLN elders, there are currently 374 men and women ages 55 years and older, enrolled in a recognized tribe and living on or near the reservation within the service area of the Spirit Lake Tribal Health program. The 55 years and older age group is expected to grow substantially over the next few years. The NRCNAA projects this age group will grow by 110% between 2000 and 2020. Clearly the impact of this large “baby boomer” population

will have a major impact on the tribe and will become a major source of change for the SLN.

Of 208 elders surveyed, 196 claimed to be Native American, 4 Native Hawaiian, 1 Alaska Native, and 7 surveys were missing this data. There were 116 women (55.8%) and 89 men (42.8%), and 3 surveys had missing information on this element. Nearly one-third of the elders surveyed at SLN fall into the “young elderly” (age 55-59 years) category (see table 1). More than one third of the sample population (n=77) interviewed claimed to be married or living with a partner; 28 elders were never married; 39 persons were divorced or separated; 56 were widowed; and 8 surveys were missing this data.

Table 1. Age of Elders Surveyed.

Age	n	Percent
55 to 59 years	69	33.2
60 to 69 years	89	42.8
70 to 70 years	35	16.8
80 years and over	8	3.8
Missing data	7	3.4

Other demographics included completion of schooling and annual income, along with current residence of the individual. Over 50% of the elders reported some high school (n=106) education; 21.6% (n=45) reported attending college; and 2.4% (n=5) reported attending graduate school; 6 surveys were missing this data. Generally in the U.S. there is a direct correlation between education completed and annual income, and

this appears to be true with the elders of the SLN. Close to one half (n=92) of the elders reported an annual income of less than \$10,000; 55 (30%) elders reported an income of \$10,000 to \$20,000; only 38 (20.5%) elders reported an income over \$20,000, and 23 surveys were missing this data.

Nearly 90% of the elders surveyed claimed to live on reservation land (n=185), and 66.3% (n=138) of the elders have lived on the reservation all of their life. Most elders (78.4%) live in a single family residence with family members (73.6%). The family members may be the grandchildren that the elders are providing care for, as reported by 96 (46.2%) respondents. Ninety (43.3%) of the elders receive care from other family members that live in the home.

Support Services

The survey asked a series of questions about which services are currently available to the elders, whether people were using them now and whether they would use them in the future should circumstances arise that they would be unable to meet their own needs. Table 2 shows which services are now available and which additional services would be most in demand for future development. The survey suggests that people would use a larger array of services if they were available. This type of information can assist the Spirit Lake tribe in planning and prioritizing to expand services to the growing numbers of elders.

General Health Status Characteristics

In Native American communities, health is seen as a relationship between body, heart, mind and soul. The relationships are essential components of their health and disease is felt not only by the individual but also by the family. The relationship between health

and harmony are significant to the Native American perspective of health and overall well-being. The SLN elders rated their health status as noted in Table 3.

Table 2. Services Available, Used, and Needed.

Type of Service	Available	Use Now	Would Use
Dietary	70 (33.7%)	9 (4.3)	60 (28.8%)
Meals of wheels	178 (85.6%)	81 (38.9%)	80 (38.5%)
Transportation	131 (63%)	23 (11.1%)	102 (49%)
Occupation Therapy	19 (9.1)	1 (0.5%)	51 (24.5%)
Speech Therapy	7 (3.4%)	0	44 (21.2%)
Respite Care	6 (2.9%)	0	47 (22.6%)
Personal Care	11 (5.3%)	2 (1%)	55 (26.4%)
Skilled Nursing	57 (27.4%)	25 (12%)	65 (31.3%)
Physician Services	59 (28.4%)	33 (15.9%)	58 (27.9%)
Social Services	90 (43.3%)	3 (1.4%)	54 (26%)
Physical Therapy	30 (14.4%)	5 (2.4%)	62 (29.8%)
Home Health	48 (23.1%)	17 (8.2%)	71 (34.1%)
Adult Daycare	2 (1%)	0	35 (16.8%)
Assisted Living	2 (1%)	0	81 (38.9%)
Nursing Home	10 (4.8%)	0	67 (32.2%)
Other Services	9 (4.3%)	1 (0.5%)	28 (13.5%)

Table 3. Health Status Rating.

Health Rating	n	Percent
Excellent	6	2.0
Very Good	30	14.4
Good	89	42.8
Fair	57	27.4
Poor	20	9.6
Missing	6	2.9
Total	208	100

Hospital Admissions

In our society today, hospital admissions and overnight stays are typically reserved for the very ill. Most frequently, the very young, the old, and those with chronic disease are more likely to become the very ill and be admitted to a hospital. The SLN elders reported over night hospitals stays over the past year as noted in Table 4.

Chronic Disease

A chronic illness is a state of disease with irreversible pathological change that lasts longer than 3 months and eventually causes permanent disability (Hans et al., 2003). Chronic disease in Indian Country has continued to escalate and remains an important predictor of health. The presence or lack of functional abilities is frequently associated with the presence or absence of a chronic disease. Liao et al. (2003) reports that Native American communities have a greater burden of health risk factors and chronic disease

Table 4. Hospital Admissions.

Length of stay	n	Percent
None	151	72.6
One night	23	11.1
Two nights	13	6.3
Three or more nights	11	5.3
Missing data	10	4.8
Total	208	100

than any other racial/ethnic minority population. The self reported chronic diseases of the SLN elders are shown in Table 5.

Risk Factor Characteristics

The etiology of many chronic diseases is highly dependent upon the environment in which people choose to live. Many behaviors are chosen and habits are developed are directly related to the most common chronic diseases and causes of death that are seen not only in Indian country but worldwide. In Table 6, you will find the self reported behavior risk factors of the elders of the SLN.

Weight and Nutrition

Being overweight or obese predisposes an individual to many chronic illnesses; however, this weight issue seems not to be addressed by most of the medical providers that are currently seeing the SLN elders. According to the survey, 159 (76.4) of the elders did not receive any advice from the providers to lose weight, but 68 (32.7%) are trying to

Table 5. Chronic Diseases Reported.

Disease	n	Percent
High Blood Pressure	108	51.9
Diabetes	93	44.7
Arthritis	85	40.9
Cataracts	36	17.3
Congestive heart failure	29	13.9
Depression	26	12.5
Asthma	24	11.5
Osteoporosis	19	9.1
Stroke	17	8.2
Prostate Cancer	3	1.4
Colon/Rectal Cancer	4	1.9
Lung Cancer	3	1.4
Breast Cancer	3	1.4
Other Cancers	9	4.3
Total all cancers	22	10.4

lose weight on their own; however 125 (60.1%) elders feel their weight is OK. Weight issues are tied not only to exercise habits but also to types of food ingested and food habits. Following you will find a table depicting many of the self reported factors regarding food intake in the elders of the SLN (Table 7).

Table 6. Behavior Risk Factors.

Behavior risk factor	n	Percent
Tobacco (smoking) use	86	41.4
Alcohol use in past year	55	26.4
Over weight or obese	164	78.9
Exercise activity –Walking	115	55.3

Table 7. Nutrition Intake Factors.

Nutrition Related Factors	n	Percent
Illness changed foods eaten	64	30.8
Fewer than 2 meals/day	41	19.7
Few fruits/vegetable/milk	83	39.9
3+ alcohol drinks/day	5	2.4
Tooth/mouth problems	36	17.3
No \$ to buy foods needed	50	24
Eats alone most of time	46	22.1
Take 3 or more meds/day	73	35.1
Not able to shop for self	32	15.4

Preventive Care Practices

Preventive care practices are very dependent upon accessing the health care system and receiving the appropriate care from those providers within that system. The following preventive care practices are essentially used to rule out pathology of specific illnesses, with the idea that if a cancer is found early, the prognosis is much improved. This is assuming that follow-up is provided in a timely manner with any abnormal lab findings. The preventive care practices of the SLN elders are noted in Table 8.

Table 8. Preventive Care Practices.

Frequency of Exam	Mammogram n = 116	Pap Smear n = 116	Stool for Occult Blood n = 208	PSA test n = 89
In the past year	37 (31.9%)	21 (18.1%)	43 (20.7%)	24 (27%)
Past 2-5 years	50 (43.1%)	49 (42.2%)	24 (11.5%)	35 (39.3%)
5 or more years	17 (14.7%)	38 (32.8%)	6 (2.9%)	0
Never tested	8 (6.9%)	3 (2.8%)	127 (61.1%)	25 (28.1%)
Missing	4 (3.4%)	5 (4.3%)	8 (3.8%)	5 (5.6%)

Independence Factors

The ability to see, hear and eat without dental pain/problems are all factors related to independence and/or illness and wellness. The vision, hearing, and dental status, practices and needs are listed in Table 9.

The ability to care for self and remain independent is correlated with functional limitations. These functional limitations serve as the basis for establishing informal or a

Table 9. Sensory Factors.

Category	n	Percent
EYES		
Blindness	17	8.2
Corrective lens use	177	85.1
Trouble seeing w lenses	69	33.2
Last Eye Exam		
Past year	70	33.6
Past 1-5 years	111	53.4
Over 5 years	16	7.7
Never	3	1.4
Missing information	8	3.8
EARS		
Deafness	31	14.9
Hearing aid use	13	6.3
Trouble hearing w aid	30	14.4
Last hearing check		
Past year	22	10.6
Past 1-5 years	40	19.2
Over 5 years	60	28.8
Never	73	35.1
Missing information	13	6.3
TEETH		
Work needed:		
Fillings	51	24.5
Teeth pulled	44	21.2
Gum treatment	5	2.4
Denture work	68	32.7
Pain relief	7	3.4
Improve appearance	13	6.3
Other	11	5.3
None	71	34.1
Last dental exam		
Past year	56	27
1-5 years	104	50
Over 5 years	34	16.3
Never	3	1.4
Missing	11	5.3

formal need for care. Functional limitations are defined in terms of Activities of Daily Living that include bathing, dressing, eating, getting in and out of bed, walking and using the toilet. One's ability to manage each of these is essential for self care. Table 10 shows the SLN elders' limitations in these areas.

Table 10. Activities of Daily Living.

Activity of Daily Living	n	Percent
Bathing difficulty	32	15.4
Dressing difficulty	20	9.6
Eating difficulty	7	3.4
Difficulty with getting in /out of bed by self	28	13.5
Walking difficulty	45	21.6
Toileting difficulty	12	5.8

Similarly, IADLs or Instrumental Activities of Daily Living serve as indicators of a need for assistance with tasks required for living safely and independently in one's home. This includes such things as meal preparation, shopping, money management, telephone use, heavy and light housework, and getting outside of the home. Table 11 indicates what the elders of the SLN had to say about these abilities/tasks.

Health Care Access

The ability to access the health care system is frequently associated with having adequate health care coverage. According to the response received from the SLN elders,

Table 11. Instrumental Activities of Daily Living.

Instrumental Activity of Daily Living	Frequency	Percent
Meal Preparation difficulty	27	13
Inability to shop for self	34	16.3
Money Management probl.	14	6.7
Use of Telephone	3	1.4
Heavy Housework	56	26.9
Light Housework	22	10.6
Getting Outside	26	12.5

nearly 90% reported having some type of health coverage. The survey indicated that 182 elders (87.5%) have Indian Health Service as their primary provider, followed by Medicare, and then Medicaid. Veteran benefits are also available to many of the elders, as 30 (14.5%) of the elders reported having served in the armed forces in some capacity during their lifetime. When seeking health care advice, 112 (53.8%) elders indicated that they call or talk to a provider at the Indian Health Service clinic.

The management of appropriate health care requires time and the development of patient/provider relationships. Unfortunately, only 42 (20.2%) elders report having only one primary personal doctor or provider and 85 (40.9%) reported having no personal doctor or provider. These elders are required to see “whoever is available” at the clinic and frequently, it is a different doctor each time they are seen at the local IHS Clinic. A total of 26 (12.5%) elders reported not being able to get medical care during the past year.

The predominant reasons for not receiving the medical care were related to lack of transportation or just too long of a wait for an appointment.

Social Support and Housing

Community involvement in the form of church, community organizations or clubs was reported in the following way. More than 51.2% of the elders reported attending a church, sweat, or spiritual ceremony one or more times each week and 39.9% indicated involvement in their community through clubs, meeting or organizations on one or more occasions per week. Most of the elders keep involved in the community providing their wisdom and guidance through their experiences and knowledge, and they are recognized and valued for these qualities.

Summary

In assessing the perceived health status and the health needs of the SLN elders, there are many variables to consider. The survey tool that was used in this study was the “Identifying Our Needs: A Survey of Elders II” instrument, which has been developed by the NRCNAA included questions in the following seven categories as described earlier. (a) the general health status includes the perceived general health status of the person, self-reported chronic diseases, and cancer preventive care practices, (b) functionality is the next category, which includes self-reported limitation in ADL’s and IADL’s, (c) vision, hearing, and dental limitations and preventive care practices are the next areas addresses, (d) health care coverage and health access issues are next in the instrument, (e) risk factor assessment, including tobacco and alcohol use, along with nutrition, height, weight, and activity questions, are followed by (f) social support and housing

arrangement, and lastly by (g) demographics, including gender, age, education, income and marital status.

Many of the variables addressed are associated with behavior risks factors which can be directly linked to many chronic diseases. Changes in behavior risks are linked to chronic disease and its progression, even modest changes in diet, weight, and tobacco use can benefit the progression of a chronic disease. It is necessary to promote behavior modifications in a culturally appropriate manner in order to impact the status of many chronic diseases that exist within the SLN elders. A health promotion and disease prevention model that influences self care is the most appropriate model to guide the changes needed to alter the outcome of many chronic diseases. Pender's Health Promotion Model is multidimensional and holistic in perspective, similar to the traditional concept of health in the Spirit Lake elders and will be emphasized throughout the next chapter in evaluating and discussing the data that was introduced in this chapter.

CHAPTER IV

COMPARISON ANALYSIS OF DATA AND RECOMMENDATIONS

This chapter will discuss the findings of the study of Native American (NA) elders. As presented in previous chapters, this study addressed perceived needs and abilities of older NA people living in the Spirit Lake Nation (SLN). Throughout this chapter, general population comparison data will be presented. The National Resource Center for Native American Aging (NRCNAA) has provided the reference sources for this national comparison data (appendix C). Each research question will be addressed and discussed with reference to the theoretical framework which guided the study.

Pender's model will be used to link the data to the environment, behaviors, health, and self care practices. "Re-structuring patterns" to promote health and prevent disease will also be discussed related to health promotion and disease prevention. Additionally, recommendations for education, practice, and research concerning health promotion for Native Americans and chronic disease associated with behavior risk factors will be discussed along with potential behavior changes and health promotion ideas.

Theoretical Framework

Pender's model is based on the nature of persons interacting with their environment in their pursuit for health. Individuals should have an active role in shaping and maintaining health behaviors and modifying their environment to promote health.

Pender et al. (2002) indicates that healthy lifestyle is a function of individual

characteristics and experiences, behavior-specific cognition and affect, commitment to a plan of action and competing demands. Self-identity corresponds with a person's perception of personal health; which also influences their decisions regarding risk factors and behaviors, which in turn influences self-care attitudes and practices. Primary health promotion and disease prevention is the key to those chronic conditions that are heavily influenced by a person's behavior. Health promotion activities and self-care education must be approached from an appropriate cultural perspective, which for NAs might include maintaining meaningful relationships with family, friends, providers, and social networks within the community.

The following research questions relate overall to three assumptions of the Health Promotion model, which in turn are related to questions within the survey instrument. The chosen research questions for this study are presented below, accompanied by the related assumptions from Pender's theoretical model.

Pender's Assumption One

"Individuals seek to actively regulate their own behavior." (Pender et al., 2002, p.55)

Associated research questions:

- 1-A. What are the behavioral health risk factors reported by the elders?
- 1-B. What preventive care practices do the elders participate in?

Pender's Assumption Two

"Individuals in all their bio-psycho-social complexity interact with the environment, progressively transforming the environment and being transformed over time." (Pender et al., 2002, p.55)

Associated research questions:

- 2-A. What is the perceived health status of the elders of the SLN?
- 2-B. What are the self-reported chronic diseases of the elders?
- 2-C. What are the self-reported functional limitations of the elders?
- 2-D. What are the hearing, vision, or dental impairments/needs of the elders?

Pender's Assumption Three

“Health professionals, family and friends constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span”.

(Pender et al., 2002, p.55)

Associated research questions:

- 3-A. What are the health care access issues of the elders of the SLN?
- 3-B. What social support factors do the elders of the SLN report?

There is also a fourth guiding Pender assumption identified earlier, which relates to long-term potential outcomes from this study. This fourth assumption states, “Self-initiated re-structuring of person-environment interactive patterns is essential to behavior change” (Pender et al., 2002, p. 55). The study data will be useful in identifying the changes necessary to “re-structure patterns” to promote health and prevent disease. Behavior modification must be promoted for known risk behaviors to develop culturally appropriate care and teachings for the elders of the SLN. Through these efforts, and follow-up on the results of this study by SLN health professionals and the community, a positive change to prevent the progression of chronic disease may be realized.

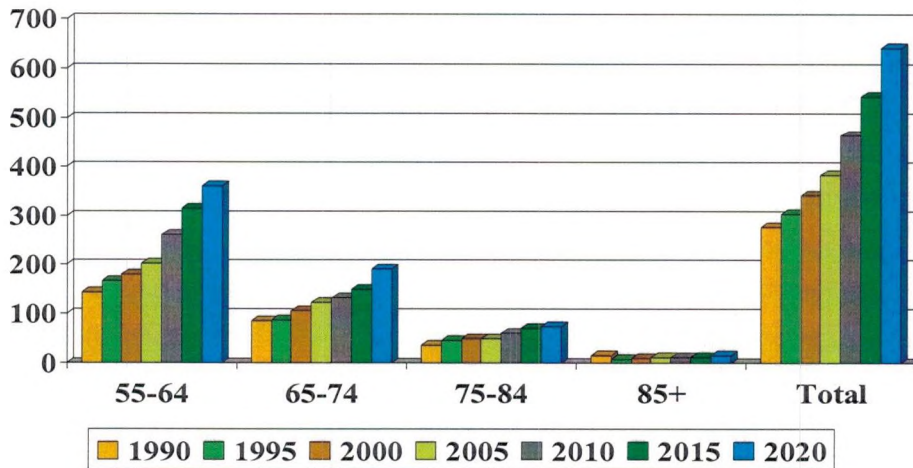
Demographics

Age

Before proceeding to discussion of the research questions, salient features of the demographic information will be briefly discussed. The demographic characteristics of the sample population in this study demonstrate significant differences between general population statistics and those of the SLN elders surveyed. The SLN elders are a great deal younger than elders in the general population, i.e., in this study 78.6% of the SLN elders were under the age of 70 years, compared to the NRCNAA's data reflecting that 58.4% of elders nationally are below the age of 70. In other words, in the general population, people do live to an average age above 70, as compared to elders of the SLN, who do not as often live beyond age 70. Native American elders are commonly defined as aged 55 years and older, in contrast to the U.S. general population of elders defined as those over age 65. This discrepancy in definition is due to comparable chronic disease rates between the two age cohorts (McCabe, 2002), that is, NAs have higher rates of chronic disease at earlier ages.

Only 4% of the SLN elders surveyed were over the age of 80 years, compared to 13.2% of the national population who are in this age group. The Spirit Lake Elder population consists largely of the "young elders", those in the 55-64 year old category. This age group is expected to grow substantially over the next few years, which will have a huge impact on this particular tribe. Immediately below is the NRCNAA's population projection for the elders of the SLN through the year 2020 (Figure 1).

Spirit Lake Native Elder Population Projections (1990-2020)



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Figure 1. Population Projection of the SLN Elder.

Overall, life expectancy of Native Americans (71.1 years) is substantially less when compared to the general U. S. population (77.6 years) (CDC, 2003). Significantly, however, the life expectancy of elders in the Aberdeen Area of I.H.S. (64.3 years) which includes Spirit Lake elders, is even less than that of other Native American groups (see Figure 2).

As the general population ages, so do the elders of the SLN. By the year 2020 the elders of the SLN will more than double, what will this mean to the chronic diseases, such as diabetes and heart disease that currently plague the people. According to our assessment, nearly 45% of Native Elders on the Spirit Lake Reservation have diabetes, in the year 2000 there were approximately 342 elders at Spirit Lake, which mean 154 people were positive for diabetes and needed medical care for that condition. In the year

2020, NRCNAA projects there will be 642 elders at Spirit Lake and at the 45% diabetes rate, 289 elders will be positive for diabetes. How will we meet the needs of nearly twice as many people with diabetes that need medical, social and psychological care for their disease process?

Life Expectancy at Birth, ages 55, 65 and 75 by IHS Area

IHS Area	At Birth	At Age 55	At Age 65	At Age 75
Aberdeen	64.3	18.9	13.2	8.5
Benidji	65.7	18.7	12.7	10.1
Billings	67.0	20.2	13.9	8.9
Alaska	68.0	21.3	14.7	9.2
Tucson	68.4	22.2	15.8	10.0
Phoenix	69.8	22.6	16.1	10.6
Portland	71.7	23.1	16.0	10.1
Navajo	71.9	24.9	17.7	11.7
Nashville	72.2	22.8	16.3	10.5
Albuquerque	72.7	25.4	19.6	12.2
Oklahoma	74.2	25.7	18.2	13.1
California	76.3	26.9	19.4	13.3
All Indians	71.1	23.5	16.7	11.2

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Figure 2. Life Expectancy Table of Native Americans by Region.

Income

A number of variables interact to produce this large discrepancy in life expectancy. One particularly significant variable that has been identified as a predictor of health status is income. Interestingly, however, although Native Americans and minorities have substantially lower incomes than whites (Pender et al., 2002) the SLN elders report that 49.7% have a personal annual income of less than \$10,000 compared to the national report of 75.8% having incomes of less than \$10,000. A possible explanation

of this finding may be that the majority of SLN elders are not poorer than the general population; however the average household size with the SLN elders is 3.25 compared to the national average of 1.76 persons per household. This indicates that more family and non-family members tend to live under one roof at Spirit Lake. Spirit Lake elders also report that 47.8% take care of grandchildren compared to the 1.9% of the general population. So, in light of the reality of the family structure, the income difference is not all that difficult to understand. Family is of great importance to NA elders, so any education and strategies for behavior change must be structured to fit the entire family configuration and not just the elder's lifestyle.

Education

Pender et al. (2002) noted that higher risk behaviors are associated with lower educational levels and higher educational levels typically correlate with higher income. Higher income also facilitates access to care and generally better health care opportunities. In this study, 24.8% of the SLN elders reported that they have attended some college and/or graduate school, compared to 47.5% of the general population. Overall, the elders of the SLN have fewer years of formal college education and participate in some higher risk behaviors that are linked to various chronic diseases; this will be discussed further in the following sections.

Research Questions

The research questions addressed in the study are again presented below. Each question will be addressed in relation to the assumptions in the Pender model.

Pender's Assumption One

The first assumption from Pender's Model is: "Individuals seek to actively regulate their own behavior" (Pender et al., 2002, p.55). This assumption was analyzed within the context of the data from the survey regarding behavior risk factors and preventive care practices.

Associated Research Question 1-A

1-A. What are the behavior risk factors reported by the elders?

Tobacco Use

The risk factors that were addressed included tobacco and alcohol usage, BMI calculations, nutrition and exercise practices. The SLN elders reported significantly higher rates of cigarette use, 42.7% report current use, compared to 28% of the general population (see Figure 3). However 70.2% of the SLN elders smoke less than one-half pack of cigarettes daily, compared to only 39% of the general population. It can be inferred, then, that more elders smoke but they do not smoke as much. The chew tobacco rate is dramatically different among SLN elders as compared to the general population prevalence of chewing tobacco users. Only 2% (n=4) of the SLN elders reported that they chew tobacco compared to 17% of the general population (see Figure 3).

Alcohol Use

There is considerably less alcohol usage within the elders of the SLN tribe. Over 62% reported that it had been 3 or more years since they drank any alcoholic beverages, as compared to only 30.1% in the general population who reported this (see Figure 4). Only 19% of the elders reported consumption of alcohol in the past 30 days, and 16.6% of those indicated they had consumed 5 or more drinks on one or more occasions. This

Tobacco Usage (N=208)

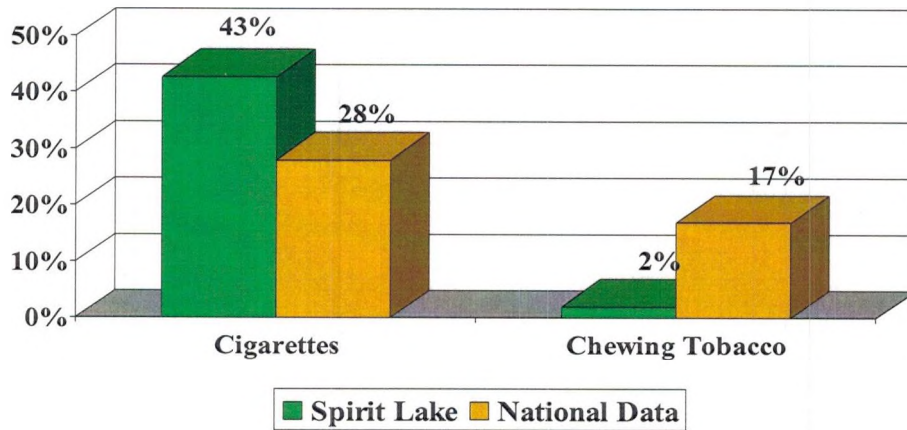


Figure 3. Tobacco Use of Elders.

How long since last drink of alcoholic beverage? (N=208)

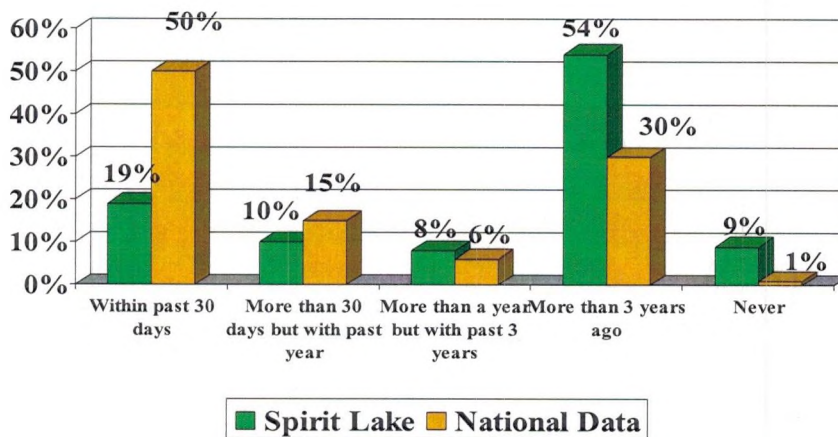


Figure 4. Alcohol Consumption of Elders Over Time.

indicates heavy alcohol consumption among a very small percentage of elders.

BMI Status

Using the height and weight reported by the elders, a body mass index (BMI) was calculated to determine how many people are overweight (BMI 25 to 29), or obese (BMI 30 and over). Weights and elevated BMI's are of significant concern because of the relationship that exists between elevated BMI and chronic disease, such as arthritis, hypertension, cancer and other functional limitations that occur due to obesity. In particular, given the prevalence of type 2 diabetes, the BMI assumes even greater significance among NAs. Nearly 84% of the elders of the SLN reported that they were overweight or obese, which puts many of them at great risk for these chronic disease states (Figure 5).

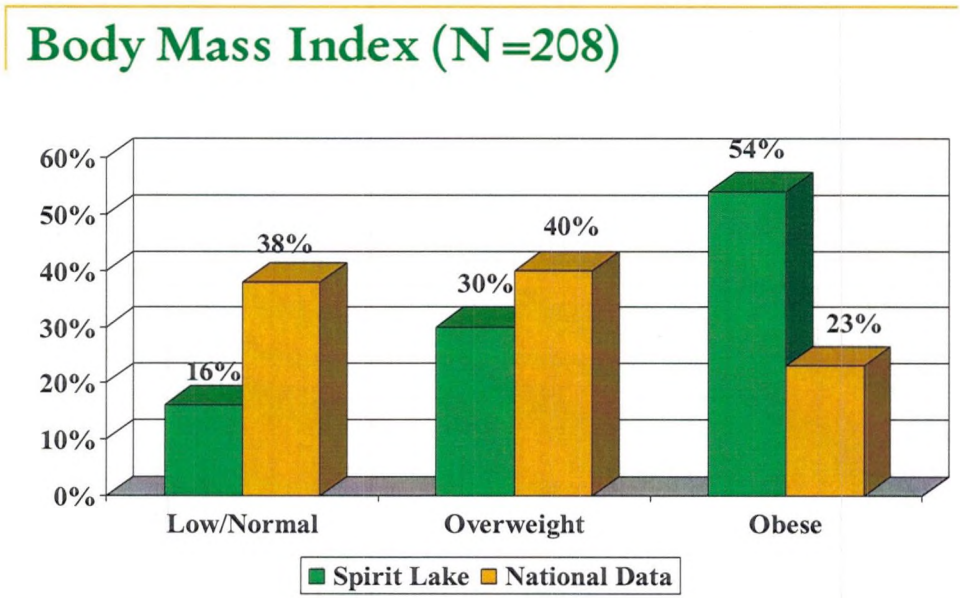


Figure 5. Body Mass Index Comparison.

Within the context of the health promotion model, it is significant that health care providers are not educating elders about their weight and its significant relationship to their health status. Nearly 83% of the SLN elders reported that their health care providers had not given them any advice about their weight during the past year. Interestingly, although obesity contributes significantly to health status, SLN elders did not report that being overweight or obese was a problem for them. Not quite 63% of the surveyed elders indicated that their current weight was "ok".

Nutrition and Diet

The nutrition and dietary issues are reflected in items that ask about eating habits and conditions that are important to consider when working with families to develop better nutrition programs and eating practices. Poor dietary habits are commonly associated with too much body weight and obesity. Nearly 40% of the SLN elders reported eating few fruits or vegetables or milk products which may likely be linked with the 24% that reported not having enough money to buy the food they need. Over 35% reported taking 3 or more medications daily which also is connected to the 30.8% that reported having an illness or condition that made them change the kind and/or amount of food that they eat. Even though the majority of the elders reported living with other family members, over 22% of the elders report eating alone most of the time and nearly 20% reported eating fewer than 2 meals daily, which is insufficient to adequately nourish themselves, particularly in light of a chronic disease such as diabetes, which focuses on consistent and frequent eating patterns for maximum control and benefit. Other concerns that were reported include 17.3% with tooth or mouth problems which makes eating difficult. This problem frequently interferes with the ability to eat fresh fruit, vegetables

and whole grains, and only 28.5% of the elders reported seeing a dentist in the past year. Over 15% reported they were not able to physically shop for themselves, indicating a need for outside help from either relatives or some sort of community based service program in order to maintain proper nutrition. Over 9% report an unintentional loss or gain of 10 pounds over the last six months, this unintended weight change frequently correlates with a new onset disease state. Only 2.4% (n=5) reported that they drank 3 or more alcohol drinks daily, which would interfere with their day to day nutritional needs and also would affect their chronic disease status. Simple nutritional needs are frequently disregarded in our high technological society today, however without the delicate balance between carbohydrates, proteins and fats, the human body doesn't survive in a healthy state of equilibrium.

Exercise

Many behaviors that are chosen and the habits developed can be directly linked to the progression of chronic diseases of the people at SLN. The ability to keep moving, keeping active with some type of exercise is critical to maintaining a healthy heart, appropriate blood sugar and healthy way of life. Over 55% of the SLN elders reported walking as the primary type of vigorous exercise that they have performed in the last 30 days. Second to walking, is the 25% that reported yard work as the activity they participated in. It seems that the day to day physical activities are an important means of getting some form of exercise. The SLN elders tend not to go to a "fitness center" to get in a "workout", there seems to be a greater need for some organized walking programs, gardening plots and continued emphasis on getting outside to maintain yard, both for the exercise perspective and the home ownership and pride aspect of things.

Associated Research Question 1-B

1-B. What preventive care practices do elders participate in?

The preventive care practices the elders of the SLN take part in are the services that are very dependent upon accessing the health care system. Nearly 90% report that the IHS is their primary provider, thus this information indicates how the IHS system does at providing these preventive care and early detection care services to the recipients of their care. The following preventive care practices are used essentially to rule out cancer pathology.

Women's Health

Nearly 33% of the SLN women report having a mammogram in the past year compared to 63.8% nationally. This statistically significant difference puts twice as many SLN women at risk of not detecting early breast cancer as those in the general population. Only 18.9% of the SLN women report having a pap smear in the past year, compared to 50.3% nationally. Once again the SLN women are nearly three times less likely to have a cervical dysplasia detected early because they are not receiving annual pap smears.

Stool for Occult Blood

A very simple test that can be done at home and brought back to the clinic is the stool for occult blood, which is a screening test for colon pathology. Over 63.5% of the SLN elders report never having a stool for occult blood test done, compared to 52% for the general population.

Men's Health

Lastly, the Prostate antigen test (PSA) was asked about, and only 28.6% of the SLN men report having this test done in the past year, compared to 59.3% nation wide.

Once again twice as many SLN men have the risk of not detecting a prostate problem early on because they are not getting this simple blood test done.

In general the elders of the SLN are at much greater risk of detecting a cancerous condition much later in the disease process because they are not receiving the preventive care measures at a comparable rate to that of the general population. This data is directly related to the fact that the Intercultural Cancer Council (ICC) (2004) reported that Native Americans continue to have the poorest survival from all cancers combined, when compared to other racial/ethnic groups. In NA people lung cancer is the most common type of cancer, followed by colon, prostate and female breast cancer (Gargiullo, Wingo, Coates, & Thompson, 2002). The poor survival rates are likely related to disparities in initial detection and the time to first cancer-directed surgery or treatment. Cancer comes in second as the cause of death in Native Americans age 65 and older (Sahyoun, et al., 2001). The data reported by the SLN elders indicates that cancer as a chronic disease is relatively low, only 10.4% report any type of cancer, but note these are the “living” elders. This 10.4% is the group of SLN elders that have likely received the testing and screening early in the disease process and have been able to intervene early in the disease process.

Pender’s Assumption Two

The second assumption from Pender’s Model is “Individuals in all their bio-psycho-social complexity interact with the environment, progressively transforming the environment and being transformed over time” (Pender et al., 2002, p. 55). This assumption is discussed below in the context of the data from the survey regarding perceived health status, self-reported chronic conditions, self-reported functional

limitations, and vision, hearing, or dental impairments.

Associated Research Question 2-A

2-A. What is the perceived health status of the elders of the SLN?

Nearly 60% (n=125) of the SLN elders reported their general health status as good, very good, or excellent. The relationship between a disease state and the essential components of how the elders generally feel about their health is impacted greatly by their family and community support and structure. There is an important relationship between harmony with self, family, spirit and an individual's perception of his/her own health. This relationship between health and harmony is significant in the SLN elders' perspective of their general health status. The majority of the SLN elders live with not only one chronic disease but frequently have multiple conditions. However, their perception of their health is greatly impacted by their sense of harmony with all dimensions of life, rather than judging health only from a perspective of their physical problems. The resiliency of the SLN elders and their ability to perceive health as a sense of harmony among multiple dimensions and relationships, beyond their physical condition and immediate problems is incredible.

Associated Research Question 2-B

2-B. What are the self-reported chronic conditions of the elders?

Diabetes

According to Hans et al. (2003) a chronic illness is a state of disease with irreversible pathological change that lasts longer than three months and ultimately causes permanent disability. The elders of the SLN reported significantly increased rates of some illnesses. For example, 44.7% (n=93) indicated that they have diabetes, compared

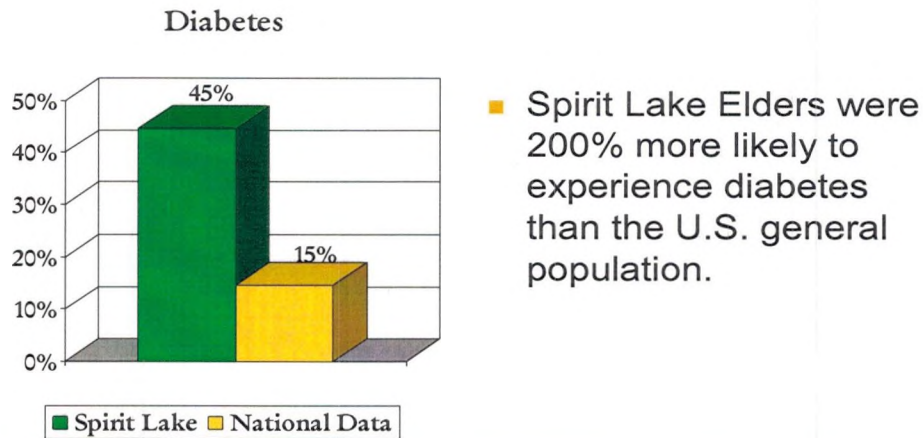
to 14.6% of elders nationally (Figure 6). This statistic alone has huge implications, i.e., SLN elders are 200% more likely to experience diabetes than the general population (see Figure 6). For the people of the tribe, the potential impact of diabetes on physical, mental, and financial well-being is substantial.

Diabetes can have devastating physical effects on the body if blood sugars are not well controlled. However, proper control of blood sugar requires a substantial amount of patient education for self management, in order to get the necessary results. Currently teaching of self management requires adequate time in the clinic setting and requires qualified staff to provide effective training. Lifestyle change is necessary for the management of diabetes and its complications. Effective diabetes self-management also requires the development of a patient-provider relationship and consistency in the messages/education given, in order for the required changes to become part of the patient's lifestyle. When only 21% of the elders in this study indicated that they have one primary provider, it is logical to infer that the teaching and training of diabetes self management is very challenging to accomplish.

Diseases Related to Vascular Resistance

Hypertension poses another significant challenge to the elders of the tribe. Over 51% of the SLN elders reported hypertension (HTN) as a problem, which is somewhat comparable to the 49.4% in the general population. However when HTN is diagnosed in addition to the diabetes, a much greater degree of vascular resistance is created, leading to an increase in the rate of heart failure and stroke.

Chronic Diseases – Diabetes (N=208)



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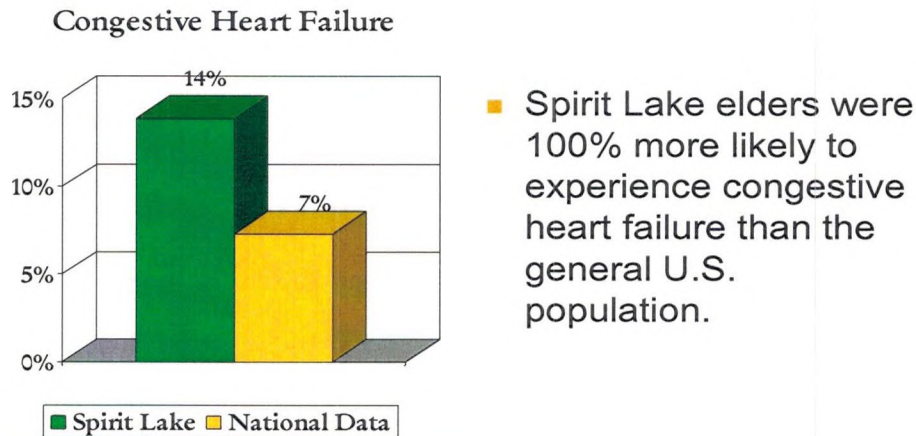


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Figure 6. Diabetes Comparison Data.

In terms of other complicating disease, there were several additional comparisons to be noted. For example, a history of congestive heart failure was reported by nearly 14% of the SLN elders, as compared to 7.3% of the general population (Figure 7). A past history of a stroke was reported by 8.2% of the SLN elders, which compares to 6.5% of the elders nationally. Increased vascular resistance can also be implicated in other physical conditions, such as myocardial infarction, limb amputation, and renal failure. Although some of these conditions were not covered in the survey questions, it is notable, that 1.4% of the SLN elders indicated they were on renal dialysis at the time of data collection.

Congestive Heart Failure (N=208)



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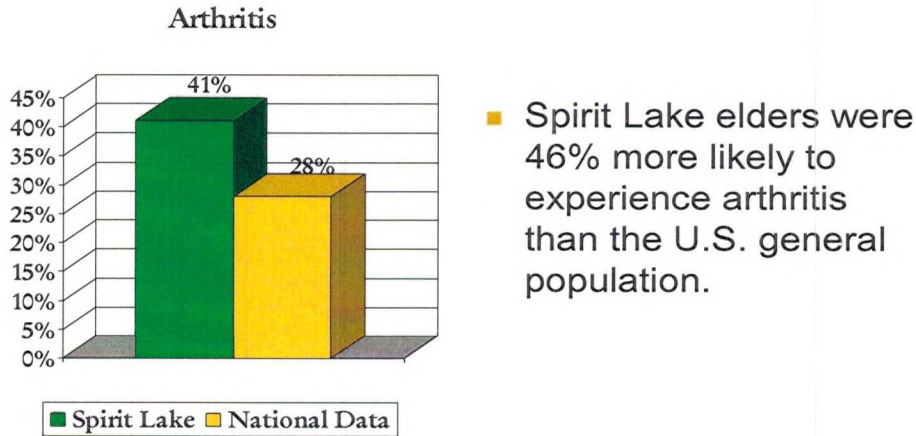
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Figure 7. Congestive Heart Failure Comparison Data.

Musculoskeletal Related Conditions

Many other chronic conditions may not be considered life threatening in most cases, but can certainly be considered disabling and life altering. Over 40% of the SLN elders reported arthritis as a chronic problem. (See Figure 8). Arthritis creates a great deal of pain, suffering, and impending disability for many elders. The 85% of elders who were found by the survey, to be overweight or obese compounds the arthritis problem, creating more destruction to the joints due to the increased body mass. However, it is very interesting to note, that 55% of the elders reported that are out walking regularly. This activity may be keeping their joints moving and limber, helping those with chronic arthritis to possibly decrease or at least delay disability.

Chronic Diseases – Arthritis (N=208)



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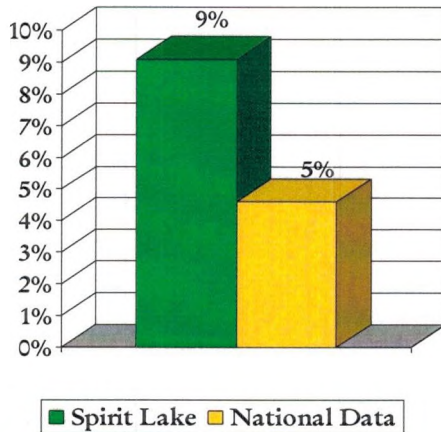
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Figure 8. Arthritis Comparison Data.

Osteoporosis rates at Spirit Lake were found to be reported at double that of the general population. Over 9.1% of the SLN elders reported osteoporosis compared to 4.6% of the general population. (Figure 9). This high rate of osteoporosis could be linked to the 40% of the SLN elders who reported eating few fruits, vegetables or dairy products and to the 45% who are not walking as a form of weight bearing physical activity.

Osteoporosis, like arthritis, can become very disabling and painful in the late stage of the disease. The goal of osteoporosis prevention is complicated further for SLN elders, since the IHS clinic, (where nearly 90% of the elders receive their primary care) does not presently have the capability to screen for osteoporosis.

Chronic Diseases – Osteoporosis(N=208)



- Spirit Lake Elders were 80% more likely to experience osteoporosis than the U.S. general population.

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Figure 9. Osteoporosis Comparison Data.

Mental Health

Depression was reported by 12.5% of the elder population. Considering all the chronic conditions that elders cope with on a day by day basis, it is not surprising that depression would be reported. However, it was surprising that so many elders actually acknowledged they were depressed. It would be an important follow-up to this study, to find out if people have the resources available to them to receive treatment for depression if desired.

Respiratory Related Illnesses and Cancer

Asthma was reported by 11.5% of the SLN elders. Considering that nearly 45% of the elders smoke tobacco, it could be suspected that the rates of other chronic lung conditions, such as emphysema may be even higher. Other environmental conditions could also create an increased burden to the elder's lungs, such as the ongoing situation

of chronic flooding and high water levels affecting the land. Flooding issues have been impacting the SLN reservation over the past fourteen years, due to the rising closed basin lake that borders the reservation. The damp, moist environment has created a great deal of mold all around the reservation, consequently creating significant respiratory issues for both young and old.

The prevalence rates for all types of cancer reported by the SLN elders are significantly less (12.4%) compared to the general population (22%). However this may be somewhat deceiving because this data comes from the survivors of cancer, “the living victims”. As discussed previously, cancer in Native Americans is often found too late or treatment is tried too late due to factors of late referral and of patients not having easy access to cancer treatment facilities. In general, the elders of the SLN are at much greater risk of detecting a cancerous condition much later in the disease process because they are not receiving the preventive care measures at a comparable rate to that of the general population as was discussed previously. This data is directly related to the fact that the Intercultural Cancer Council (ICC) (2004) report that Native Americans continue to have the poorest survival from all cancers combined, when compared to other racial/ethnic groups.

Associated Research Question 2-C

2-C. What are the self-reported functional limitations of the elders?

The capability of caring for self is frequently related to the physical ability to bathe, toilet, dress, and feed oneself, get in and out of bed, and ambulate independently. If an elder has these capabilities, he/she is typically able to live independently. A few questions from the survey tool had explored these issues in an effort to develop a plan for

future needs of the elders. The SLN elders' responses indicate that they are very independent, they seem to require significantly less help in their daily care needs than the general population.

During analysis, the NRCNAA combines data regarding ADLs and IADLs to create a measure of proposed long-term care need. In the case of the Spirit Lake Nation, nearly 70% of the elders indicated that they have little or no need for long-term care. This data may actually demonstrate the strength, resiliency, and perseverance of the SLN elders, along with an incredible ability to adapt to their environment, rather than a diminished need for long term care services.

Associated Research Question 2-D

2-D. What are the self-reported sensory impairments/needs of the elders?

Vision

The vision, hearing, and dental data that was obtained from the SLN elders is valuable in order to determine what the home and health care needs of the elders may be currently, and in future years. Over 8% of the SLN elders report blindness in one or both eyes, compared to only 3% of the general population. This visual impairment may likely be related to the fact that 45% of the SLN elders reported they have diabetes, which possibly is not well managed. As mentioned earlier, only 20% of the SLN elders reported having only one primary provider, indicating a greater risk for inconsistency and lack of continuity in medical care follow-up.

The elders indicate that over 88% of them wear glasses; 35% of the SLN elders reported seeing an eye doctor in the past year, and over 60% of the elders reported seeing an eye doctor within the past two years for an examination and screening. However,

given the higher rate of reported “blindness”, there is much room for improvement here, especially when considering other risks, such as diabetes, which can affect elders vision. Visual impairments can greatly influence a person’s ability to adapt to their environment, and to remain capable of self-care.

In contrast, only 17% of the SLN elders reported a problem with cataracts, compared to 28% of the general population. This lower incidence of cataracts may be connected to the fact that 76% of the SLN elders who were surveyed were under the age of seventy years old. Also, cataracts which do cause visual disability can be easily repaired as people age.

Hearing

Over 15% of the SLN elders reported total deafness in one or both ears, compared to less than 5% of the general population. However only 6.4% indicated they wear a hearing aid, and only 12% of the elders reported having a hearing test done in the past year. Access to hearing tests is an issue at Spirit Lake. There is currently no testing done at the local clinic, so most elders never receive assistance in this area unless they have other insurance coverage.

Dental

Dental care needs were surveyed among the SLN elders in this study, and just over 34% reported no need for any type of dental care. This is a definite contrast to the nearly 60% of elders in the general population who reported no need for dental care. The most significant areas of need identified by the SLN elders were for denture work and tooth fillings or tooth removals.

This type of need for dental work could be directly linked to the survey finding that 17.3% reported trouble eating due to tooth or mouth problems, yet only 28% of the elders reported seeing a dentist in the past year. Spirit Lake has had significant issues with maintaining a dental program, and currently there is no permanent dentist on staff, and the local dentists in the nearest town are not taking any new patients. Dental care access for the SLN elders is a huge concern. Many of the SLN elders have adapted to eating with few or no teeth, which can limit their intake in the area of healthy fiber and fresh fruits and vegetables, which certainly can affect their weight and blood sugars, as well as overall healthy nutritional status.

Pender's Assumption Three

The third assumption for Pender's model is "Health professionals, family and friends constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span" (Pender et al., 2002, p. 55). This assumption was analyzed in context of the data from the survey regarding health care access issues and social support factors.

Associated Research Question 3-A

3-A. What are the health care access issues of the elders?

Health care access for the SLN elders is a concern as noted in previous sections that discussed vision, hearing, and dental care. Even though nearly 90% of the SLN elders reported they have some type of health care coverage, it is a very limited health care coverage for the majority. Nearly 85% of the elders reported IHS is their primary payer for health care. When IHS is the primary all services must flow through the IHS system with the exception of "true" emergencies. This means that each time an elder

wants or needs to be seen outside of the IHS Clinic, they must be seen at the IHS clinic first, if that local provider decides that the elder should be seen elsewhere, the provider must fill out a referral form, this referral form then goes to a committee, consisting of medical, clerical, and administrative staff. This committee then makes the decision to refer or not based on a point system, in which the condition for which the elder is being referred must fall into a level 1 need. If the referral is approved by this committee, the elder must then wait to get the approval letter, which will have an appointment time set already, so the elder has literally no control as to who, where, or when he/she will be seen for a problem the IHS system cannot or will not handle. This system of health care delivery frequently intervenes very late in a disease process because of the cumbersome nature of the entire process and because of the 43% of the SLN elders that reported they do not have one person that they think of as their personal doctor or health care provider. When people are seen by multiple short-stay providers, they become tired of repeating their stories regarding their health and consequently many things are missed. Over the past year, nearly 14% of the elders reported they needed medical care but could not get it, compared to 4% of the general population. This data would suggest that the IHS system has a tremendous influence on persons receiving health care under their system. It is a very paternalistic system and has not proven to be very effective in providing the health care that the U.S. treaties guaranteed the Native American communities.

Associated Research Question 3-B

3-B. What social support factors do the elders report?

Social support factors at Spirit Lake are multiple but family undoubtedly has the greatest influence on the elder. The family bonds are very strong and illness not only

affects the elder but the entire family. As was noted earlier, nearly 75% of the SLN elders live with other family members. One thing that should be clarified is that family members are whomever the elder declares to be their family; it does not necessarily mean that the family is related by birth. Over 45% of the elders indicated they have family members who care for them and over 47% of the elders reported taking care of grandchildren. The SLN elders also reported that they are involved in various aspects within the community. Over 50% report attending some type of religious ceremony at least one time each week, and over 46% reported belonging to a group or board which gets nearly 40% of the elders out to attend a meeting at least once weekly. The elders of the SLN are involved in their community and influence the younger generation by their actions and involvement, creating a high respect for the elders.

The health care provider relationship has been discussed previously in the access to health care section, however I believe that the nearly 50% that indicated “No” or “don’t know/not sure” to question number 22, “Do you have one person you think of as your personal doctor or health care provider?” is very significant. Nearly one half of the SLN elders do not have an established relationship with a health care provider. I believe this sets people up for failure in their treatment plans, particularly in the case of long term chronic conditions in which the patient is seen repeatedly for similar problems. To establish a positive, trusting relationship between provider and patient takes time. However once that relationship is recognized, the treatment regiment frequently becomes more successful because the patient feels that the provider cares about them, their family and their long-term condition.

Pender's Assumption Four and Recommendations

The fourth assumption in Pender's model of Health Promotion relates to potential directions for use of the data obtained from the survey. The fourth assumption states, "Self-initiated restructuring of person-environment interactive patterns is essential to behavior change." (Pender et al., 2002, p. 55). The survey data will be useful in identifying the changes necessary to "re-structure patterns" to promote health and prevent disease. This "re-structuring of patterns" to promote healthy change will lead into the following discussion of recommendations for education, practice and future research concerning elder Native Americans, chronic disease associated with behavior risk factors, and health promotion. .

Although data gathered by administering this survey provided a critical mass of data that related to one chronic illness. This chronic illness is one that can be greatly improved by changing behaviors and environment surrounding it. The illness is type 2 diabetes. Managing a chronic condition, such as diabetes, requires empowerment of individuals, families, and literally entire communities to make positive lifestyle changes, which requires teaching about the disease and the process of managing blood sugars and complications. This takes time and qualified staff. If the time is taken now to teach the elders, this education potentially could have a powerful effect on future generations, trickling down to educate children, grandchildren, great grandchildren. As has been documented already, 75% of the elders live with other family members and nearly 50% of SLN elders care for grandchildren. Also, the respect that elders traditionally receive from the younger generations in their families can be a significant factor which will aid in the transmission of important health promotion information to the next generation.

Recommendations for Practice and Education

The current diabetes education model that exists within the IHS system requires the elders come to the IHS facility for all education and care. In order for significant change to happen, the diabetes education needs to come to the elders in their communities and in their homes. The setting in which health education for self-management is provided is important. This education needs to come out to the elders and their families in a comfortable and informal format with an open discussion approach. This environment in which diabetes education and self management/self-care is provided is fundamentally important to the success of educational efforts. The recommendation for educating elders would be to recruit local community health educators who are tribal people. They will receive intensive and ongoing training in diabetes prevention and care, using the "Talking Circle" model. This environment creates a supportive model for learning, for both the community educator and the elder. The nurse will function as the "trainer" for the "Talking Circle" model of education, and the local resource person for the trained health educators.

The local community health educators will be chosen by the community, they will attend a train the trainer diabetes education program using the "Talking Circle" methods. This training will be an ongoing continual process in which the community health educators will become experts in the area of diabetes. They will be able to share this information on a regular basis with their community members, creating an environment that promotes a healthy lifestyle by decreasing the obesity rates, increasing good food habits based on traditional foods, and increasing the day to day exercise patterns of individuals. By doing this the elders and community people may be able to delay and/or

prevent the occurrence of diabetes in the upcoming generations. The community health educators will also assist the elders with diabetes, by developing ongoing community walking groups, armchair exercise groups, and community garden projects, to promote exercise and movement, to better control their sugars. This must be a community based program and the community health educators must have access to a nurse manager/educator and resources should they run into problems beyond their training and abilities.

This train the trainer program should take place through the local tribal community college. The tribal colleges should become the experts on providing the teaching and training that each tribe is in need of. The local tribal college has grown immensely over the past five years, not just in size but also in stability and strength of their programs. The tribal college could also be the resource site for the community health educators; it would become a very stable and sound program this way. It will become a very strong community based program, changing with time and needs of the community.

Education of Nurses and Other Health Professionals

So how does this tie into nursing education? Nursing schools need to emphasize the importance of community health education and awareness of the needs of minority populations. It is also important for health professionals to be more knowledgeable of the process of empowering people to promote changes for positive health outcomes. Most people have many things going on in their lives and the additional challenge of facing a chronic illness may mean that they are not able to make necessary changes independently. The involvement of health professionals, especially nurses in the

community setting, as well as family involvement is essential for change to effectively happen in most people lives. Change is difficult.

Recommendations for Research

Initial research would engage elders in the community to further identify health education needs, specifically related to diabetes. Following this assessment, a planning team would propose educational strategies (such as the talking circle) and would design research studies to evaluate their impact. For example three research questions that could be followed up based on this study would be; (a) what are the identified health education needs of elders from their perspective? and (b) what are the outcomes of various health education strategies for diabetes (such as the talking circle approach) measured in terms of hemoglobin A1C, exercise patterns, and weight management among elders? (c) how do these strategies that have been developed for the Spirit Lake Nation translate to effective diabetes management in elders in other native communities?

Conclusion

Behaviors, numerous environmental factors and self-care practices are interlinked under Pender's model and they all affect an individual's perception and actual state of health. To promote the health and well being of individuals, nurses need to establish an understanding of the current interactive patterns that exist in the community. To promote healthy and positive change in a community the existing patterns need to be re-structured in an approach that adapts to the holistic needs of the community. This study of native elders at the Spirit Lake Nation has provided the preliminary data base required to begin this restructuring for positive health outcomes. The "Talking Circle" model may be the approach required to promote the changes needed to impact on diabetes at SLN.

APPENDICES



Identifying Our Needs: A Survey of Elders II

Funding for this project is provided by a grant, No. 90-AM-0756, from the Administration on Aging, Department of Health and Human Services.

MARKING EXAMPLE: NUMBER OF TIMES
 1 0 0 0 0 0 0 0 0 0 0 0
 5 0 0 0 0 0 0 0 0 0 0 0

GENERAL HEALTH STATUS

(The following questions are related to your general health status, any Chronic diseases you might have, and your ability to get around.)

1. Would you say your health in general is excellent, very good, good, fair, or poor?

- Excellent Very Good Good Fair Poor

2. During the past 12 months, how many different times did you stay in the hospital overnight or longer?

- None
- | | | | | | | | | | | |
|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| NUMBER OF TIMES | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

3. Has a doctor ever told you that you had any of the following diseases. (Please mark all that apply)

- Arthritis?
- Congestive Heart Failure?
- Stroke?
- Asthma?
- Cataracts?
- Diabetes?
 - Do you take oral medication?
 - Do you take insulin?
 - Are you on dialysis?
 - (For women) Was this only during a pregnancy?
- Prostate Cancer?
- Colon/Rectal Cancer?
- Lung Cancer?
- Breast Cancer?
- Other Cancer?
- High Blood Pressure?
- Osteoporosis?
- Depression?

4. How long has it been since you had your blood stool test using a home kit?

- Never Within the past 3 years
 Within the past year Within the past 5 years
 Within the past 2 years 5 or more years ago

5. How long has it been since you had your last mammogram? (For women only)

- Never Within the past 3 years
 Within the past year Within the past 5 years
 Within the past 2 years 5 or more years ago

6. How long has it been since you had your last Pap smear? (For women only)

- Never Within the past 3 years
 Within the past year Within the past 5 years
 Within the past 2 years 5 or more years ago

7. How long has it been since you had your last PSA, prostate-specific antigen test, a blood test used to check MEN for prostate cancer? (For men only)

- Never Within the past 3 years
 Within the past year Within the past 5 years
 Within the past 2 years 5 or more years ago

ACTIVITIES OF DAILY LIVING (ADL'S)

8. Because of a health or physical problem that lasted more than 3 months, did you have any difficulty... (Please mark all that apply)

- Yes Needs Assistance
- Bathing or showering?
 - Dressing?
 - Eating?
 - Getting in or out of bed?
 - Walking?
 - Using the toilet, including getting to the toilet?

INSTRUMENTAL ACTIVITIES OF DAILY LIVING (IADL'S)

9. Because of a health or physical problem that lasted longer than 3 months, did you have difficulty... (Please mark all that apply)

- Yes Needs Assistance
- Preparing your own meals?
 - Shopping for personal items (such as toilet items or medicines)?
 - Managing your money, (such as keeping track of expenses or paying bills)?
 - Using the telephone?
 - Doing heavy housework, (like scrubbing floors, or washing windows)?
 - Doing light housework, (like doing dishes, straightening up, or light clean up)?
 - Getting outside?

VISION, HEARING, & DENTAL

10. Do you have total blindness in one or both eyes?

- Yes, one eye Yes, both eyes No

11. Do you use eyeglasses or contact lenses?

- Yes No

12. Do you have trouble seeing with one or both eyes (even when wearing glasses or contact lenses)?

- Yes, one eye Yes, both eyes No

13. How long ago was your last visit to the optometrist or eye doctor?

- 6 months or less
- More than 6 months, but not more than 1 year ago
- More than 1 year, but not more than 2 years ago
- More than 2 years, but not more than 3 years ago
- More than 3 years, but not more than 5 years ago
- More than 5 years ago
- Never have been

PLEASE DO NOT WRITE IN THIS AREA



18955

VISION, HEARING, & DENTAL

14. Do you now have total deafness in one or both ears?

- Yes, one ear Yes, both ears No

15. Do you use a hearing aid? Yes No

16. Do you have trouble hearing (even when wearing your hearing aid)? Yes No

17. How long has it been since your last hearing test?

- 6 months or less
 More than 6 months, but not more than 1 year ago
 More than 1 year, but not more than 2 years ago
 More than 2 years, but not more than 3 years ago
 More than 3 years, but not more than 5 years ago
 More than 5 years ago
 Never have been

18. What type of dental care do you need now? (Please mark all that apply)

- Teeth filled or replaced (for example, fillings, crowns, and/or bridges)
 Teeth pulled
 Gum treatment
 Denture work
 Relief of pain
 Work to improve appearance (for example, braces or bonding)
 Other
 None

19. How long ago was your last visit to a dentist or dental hygienist?

- 6 months or less
 More than 6 months, but not more than 1 year ago
 More than 1 year, but not more than 2 years ago
 More than 2 years, but not more than 3 years ago
 More than 3 years, but not more than 5 years ago
 More than 5 years ago
 Never have been

HEALTH CARE ACCESS

20. Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?

- Yes Don't know/Not sure
 No Refused

21. If yes, which type of health care coverage do you have (Please mark all that apply)?

- Medicare Indian Health Service
 Medicaid Tribal Insurance
 Private Insurance Other
 Veteran's Administration

22. Do you have one person you think of as your personal doctor or health care provider?

- Yes, only one Don't know/not sure
 More than one Refused
 No

23. When you are sick or need advice about your health, to which one of the following places do you usually go?

- A doctor's office
 A public health clinic (I.H.S. or tribal) or community health center
 A hospital outpatient department
 A hospital emergency room
 Urgent care center
 Some other kind of place
 No usual place

24. Was there a time in the past 12 months when you needed medical care, but could not get it?

- Yes (go to question 25)
 No (go to question 26)

25. What is the main reason you did not get medical care?

- Cost
 Distance
 Office wasn't open when I could get there
 Too long a wait for an appointment
 Too long a wait in waiting room
 No child care
 No transportation
 No access for people with disabilities
 The medical provider didn't speak my language.
 Other

TOBACCO & ALCOHOL USAGE

26. Do you smoke cigarettes now?

- Yes, everyday
 Yes, some days (e.g. ceremonial or social)
 No (Skip to question #28)

27. How many cigarettes do you smoke a day? (Please enter the number of cigarettes.)

NUMBER OF CIGARETTES

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

28. Do you use chewing tobacco or snuff?

- Yes
 No (If no, skip to question #30)

29. How many containers of snuff or chewing tobacco per week do you use?

Number of Containers

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

30. The next few questions are about drinks of alcoholic beverages. By a "drink," we mean a can or bottle of beer, a glass of wine or a wine cooler, a shot of liquor, or a mixed drink with liquor in it. How long has it been since you last drank an alcoholic beverage?

- Within the past 30 days
 More than 30 days ago but within the past 12 months
 More than 12 months ago but within the past 3 years
 More than 3 years ago
 I have never had an alcoholic drink in my life (skip to question #32)

31. During the past 30 days, on how many days did you have five or more drinks on the same occasion? (By "occasion," we mean at the same time or within a couple hours of each other).

- None 3 to 5 days
 1 or 2 days 6 or more

WEIGHT & NUTRITION

32. How tall are you without shoes?

FEET

INCHES

33. How much do you weigh today?

POUNDS

34. In the past 12 months, has a doctor, nurse or other health professional given you advice about your weight?

- Yes, to lose weight
 Yes, to gain weight
 No

35. Are you presently trying to lose or gain weight?

- Yes, trying to lose weight
 Yes, trying to gain weight
 No, my weight is OK

36. Please mark all that apply to your nutritional health.

Yes

- I have an illness or condition that made me change the kind and/or amount of food I eat.
 I eat fewer than 2 meals per day.
 I eat few fruits or vegetables or milk products.
 I have 3 or more drinks of beer, liquor or wine almost every day.
 I have tooth or mouth problems that make it hard for me to eat.
 I don't always have enough money to buy the food I need.
 I eat alone most of the time.
 I take 3 or more different prescribed or over-the-counter drugs a day.
 Without wanting to, I have lost or gained 10 pounds in the last 6 months.
 I am not always physically able to shop, cook and/or feed myself.

ADD FOR TOTAL SCORE 0-2 = good,
3-5 = moderate nutritional risk,
6 or more = high nutritional risk

EXERCISE

37. Over the past 30 days, what vigorous exercises did you do? (Please mark all that apply)

- Aerobics Walking on a treadmill?
 Bicycling Swimming
 Bicycling on a stationary bike? Weight Lifting
 Gardening Yard Work
 Jogging Traditional Pow-wow
 Jogging on a treadmill? Dancing
 Running
 Running on a treadmill?
 Walking

SOCIAL SUPPORT/HOUSING

38. How often do you attend church, sweats, ceremonies, or religious services?

TIMES PER WEEK

39. How many clubs or organizations such as church groups, community boards, or school groups do you belong to?

NUMBER OF GROUPS

40. Altogether, how often do you attend meetings of the clubs or organizations that you belong to?

TIMES PER WEEK

41. How long have you lived at your present address?

- Whole life 3 - 4 years
 21 years & over 1 - 2 years
 11 - 20 years Less than 1 year
 5 - 10 years

42. What type of housing do you presently have?

- Single family residence
 An apartment
 Sleeping room, boarding house
 *Retirement home
 *A health facility (available medical personnel)
 Other

(* If retirement home/health facility is checked skip to question #49)

43. Are you living with family members, non-family members, or alone?

- With family members
 With non-family members
 With both family and non-family members
 Alone

44. How many (including yourself) live in your household?

NUMBER IN HOUSEHOLD

45. Do you have a family member who cares for you?

- Yes No

46. Do you take care of grandchildren?

- Yes No

Please continue
on the next page



Appendix B

SPIRIT LAKE TRIBE RESOLUTION NO. A05-04-079

WHEREAS, the Spirit Lake Tribe, formerly known as the Devils Lake Sioux Tribe of Indians is a federally recognized American Indian tribe governed by a revised *Constitution* dated May 5, 1950, approved by the Acting Commissioner, Bureau of Indian Affairs, July 14, 1961, and subsequently amended July 17, 1969; May 3, 1974; April 16, 1976; May 4, 1981 and August 19, 1996; and

WHEREAS, the Spirit Lake Tribal Council (hereinafter the "Tribal Council"), as the governing body of the Tribe, is empowered to engage in any business that will further the economic well-being of the members of the Spirit Lake Tribe; and

WHEREAS, Long-term care, a category that includes health promotion, home health services, personal care, housekeeping assistance, meals-on-wheels, skilled nursing care, assisted living, and other in-home services, is an emerging unmet need in Indian Country; and,

WHEREAS, the University of North Dakota National Resource Center on Native American Aging has been awarded a grant through the Administration on Aging, Department of Health and Human Services, to provide technical assistance on the health and social needs of Native Elderly and assist Tribes in conducting a needs assessment which is a requirement for their AoA grant; and

WHEREAS, the needs assessment is designed to yield information on the following Native elder health care needs:

- General Health Status
- Activities of Daily Living
- Visual, Hearing, and Dental
- Tobacco and Alcohol Use
- Nutrition, Exercise, and Excess Weight
- Social Support, Housing and Work

WHEREAS, In addition to providing technical assistance, the grant to University of North Dakota National Resource Center on Native American Aging is required by the Older Americans Act to perform research and disseminate the results of the research; and

WHEREAS, the University of North Dakota National Resource Center on Native American Aging is asking Tribes throughout the nation to volunteer to participate in a partnership arrangement, to identify the needs of American Indian and Alaska Native Elders nationwide, in which the University and the Tribe will each assume responsibilities;

What the University of North Dakota will provide:

- Needs assessment instruments
- Assistance in sampling
- Training of interviewers
- Consultation with interviewers via email or telephone
- Data entry and analysis
- Data storage
- Production of tables and comparisons with national statistics

**SPIRIT LAKE TRIBE
RESOLUTION NO. A05-04-079
Page No. 2**

What each Tribe will provide:

- A Tribal Resolution documenting participation in the Native Elder Social and health needs assessment
- A list of elders to interview
- Interviewers or volunteers to conduct the survey
- Interpretation of the results with local input
- Development of recommendation for actions
- Dissemination of the results to tribal leaders and health officials

WHEREAS, Summary information from your needs assessment, along with a national comparison report from all the Tribal needs assessments, will be returned to the tribal council and to Eileen Tabert, RN, PHN, the tribal contact person for the project; and

WHEREAS, The data returned to the Spirit Lake Nation will be further analyzed by Ms. Tabert to fulfill the thesis requirements of her Master's in Nursing degree. Additionally, the data fulfills Administration on Aging's Title VI Elder Nutrition Grant renewal requirements for a needs assessment, and will be used to develop home and community based services; and

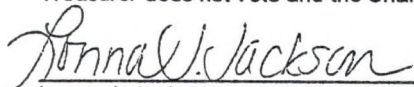
WHEREAS, the confidentiality of enrolled members and Tribal information is of the utmost importance; therefore the information in this needs assessment, will be collected anonymously by tribal members with the information stored at the UND School Of Medicine and Health Sciences within a locked file cabinet and destroyed after a period of three years.

NOW THEREFORE BE IT RESOLVED, that the Tribal Council of the Spirit Lake Nation Hereby authorizes participation in the "Identifying Our Needs: A survey of Elders" Native elder social and health needs assessment. The Tribal Council grants permission to the University of North Dakota National Resource Center on Native American Aging to use all collected needs assessment information in aggregate format for the purpose of disseminating state, regional, and national results from analyses of the data.

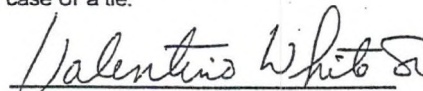
FURTHERMORE BE IT FINALLY RESOLVED, that the specific information collected within the boundaries of the Spirit Lake Nation belongs to the Spirit Lake Nation and may no be released in any form to individuals, agencies, or organizations without additional tribal authorization.

C E R T I F I C A T I O N

I, the undersigned, as Secretary-Treasurer of the Spirit Lake Tribal Council, do hereby certify that the Tribal Council is composed of six (6) members, of whom four (4) were present constituting a quorum for a Special Meeting, which was duly called and convened this 26th day of March 2004 and approved this resolution by affirmative vote of two (2) in favor, none (0) opposed, none (0) abstaining and two (2) absent. (The Secretary-Treasurer does not vote and the Chairman votes only in case of a tie.



Lonna J. Jackson,
Secretary-Treasurer



Valentino White Sr.
Tribal Chairman

Appendix C

Spirit Lake Tribe Comparison Data to Aggregate Tribal Data and National Data

Question	Response(s)	Tribal Data (55 and over)	Aggregate Tribal Data (55 and over)	National Data (55 and over)
General Health Status				
1. Would you say your health in general is excellent, very good, good, fair, or poor?	Excellent	3.0%		14.1% ¹
	Very good	14.9%		26.4% ¹
	Good	44.1%		32.1% ¹
	Fair	28.2%		18.1% ¹
	Poor	9.9%		9.3% ¹
2. During the past 12 months, how many different times did you stay in the hospital overnight or longer?	None	76.3%		82.0% ⁴
	1 night	11.6%		12.0% ⁴
	2 nights	6.6%		4.0% ⁴
	3 or more nights	5.6%		2.0% ⁴
3. Has the doctor ever told you that you had any of the following diseases? (Please mark all that apply)	A. Arthritis?	40.9%		28.4% ¹
	B. Congestive heart failure?	13.9%		7.3% ²
	C. Stroke?	8.2%		6.5% ¹
	D. Asthma?	11.5%		10.8% ¹
	E. Cataracts?	17.3%		28.0% ³
	F. Diabetes?	44.7%		14.6% ¹
	- F1. Do you take oral medication?	34.6%		70.9% ¹
	- F2. Do you take insulin?	16.3%		25.2% ¹
	- F3. Are you on dialysis?	1.4%		Not Available
	- F4. (For women) Was this only during pregnancy?	0.0%		0.5% ¹
	Prostate Cancer?	3.4%		7.4% ¹
	Colon/Rectal Cancer?	1.9%		0.4% ²
	Lung Cancer?	1.4%		1.8% ²
	Breast Cancer?	1.4%		1.7% ²
	Other Cancer?	4.3%		10.7% ²
	High Blood Pressure?	51.9%		49.4% ¹
Osteoporosis?	9.1%		4.6% ²	
Depression?	12.5%		Not Available	
4. How long has it been since you had your blood stool test using a home kit?	Never	63.5%		52.0% ¹
	Within the past year	21.5%		23.2% ¹
	Within the past 2 years	8.0%		9.2% ¹
	Within the past 3 years	3.0%		8.4% ¹
	Within the past 5 years	1.0%		
	5 or more years ago	3.0%		7.2% ¹
5. How long has it been since you had your last mammogram? (For women)	Never	7.1%		8.6% ¹
	Within the past year	33.0%		63.8% ¹
	Within the past 2 years	26.8%		13.8% ¹

only)	Within the past 3 years	8.9%		4.7% ¹
	Within the past 5 years	8.9%		3.3% ¹
	5 or more years ago	15.2%		5.8% ¹
6. How long has it been since you had your last pap smear? (For women only)	Never	2.7%		6.0% ¹
	Within the past year	18.9%		50.3% ¹
	Within the past 2 years	20.7%		14.3% ¹
	Within the past 3 years	9.9%		6.5% ¹
	Within the past 5 years	13.5%		5.5% ¹
	5 or more years ago	34.2%		17.4% ¹
7. How long has it been since you had your last PSA, prostate-specific antigen test, a blood test used to check MEN for prostate cancer? (For men only)	Never	29.8%		20.4% ¹
	Within the past year	28.6%		59.3% ¹
	Within the past 2 years	29.8%		11.1% ¹
	Within the past 3 years	9.5%		4.0% ¹
	Within the past 5 years	2.4%		2.7% ¹
	5 or more years ago	0.0%		2.5% ¹
Activities of Daily Living (ADL's)				
8. Because of a health or physical problem that lasted more than 3 months, did you have any difficulty . . .	A. Bathing or showering?	15.4%		36.8% ⁴
	B. Dressing?	9.6%		15.8% ⁴
	C. Eating?	3.4%		8.1% ⁴
	D. Getting in or out of bed?	13.5%		22.1% ⁴
	E. Walking	21.6%		33.7% ⁴
	F. Using the toilet, including getting to the toilet?	5.8%		22.8% ⁴
Instrumental Activities of Daily Living (IADL's)				
9. Because of a health or physical problem that lasted longer than 3 months, did you have any difficulty . . .	A. Preparing your own meals?	13.0%		19.7% ⁴
	B. Shopping for personal items (such as toilet items or medicines)?	16.3%		34.8% ⁴
	C. Managing your money (such as keeping track of expenses or paying bills)?	6.7%		17.9% ⁴
	D. Using the telephone?	1.4%		9.6% ⁴
	E. Doing heavy housework (like scrubbing floors, or washing windows)?	26.9%		51.6% ⁴
	F. Doing light housework (like doing dishes, straightening up or light clean up)?	10.6%		17.0% ⁴
	G. Getting outside?	12.5%		44.2% ⁴
Measure of Long Term Care Need				
The adls and iadls were combined to create a measure for long-term care need for your community.	Little or none	68.8%		44.9% ⁴
	Moderate	13.5%		21.5% ⁴
	Moderately severe	6.3%		9.2% ⁴
	Severe	11.5%		24.5% ⁴
Vision, Hearing and Dental				
10. Do you have total blindness in one or both	Yes	8.5%		3.0% ³
	Yes, one eye	5.5%		2.7% ³

eyes?	Yes, both eyes	3.0%		0.3% ³
	No	91.5%		97.0% ³
11. Do you use eyeglasses or contact lenses?	Yes	88.1%		89.0% ⁴
	No	11.9%		11.0% ⁴
12. Do you have trouble seeing with one or both eyes (even when wearing glasses or contact lenses)?	Yes, one or both eyes	34.5%		30.0% ²
	No	65.5%		70.0% ²
13. How long ago was your last visit to the optometrist or eye doctor?	6 months or less	20.0%		Not Available
	Over 6 months, not over 1 year	15.0%		
	Over 1 year, not over 2 years	24.0%		
	Over 2 years, not over 3 years	23.0%		Not Available
	Over 3 years, not over 5 years	8.5%		
	More than 5 years ago	8.0%		
	Never have been	1.5%		
14. Do you now have total deafness in one or both ears?	Yes, one ear	12.6%		4.0% ³
	Yes both ears	2.4%		Less than 1% ³
	No	85.0%		96.0% ³
15. Do you use a hearing aid?	Yes	6.4%		7.0% ⁴
	No	93.6%		93.0% ⁴
16. Do you have trouble hearing (even when wearing your hearing aid)?	Yes	17.6%		23.0% ³
	No	82.4%		77.0% ³
17. How long has it been since your last hearing test?	6 months or less	5.1%		Not Available
	More than 6 months but not more than 1 year ago	6.2%		
	More than 1 year, but not more than 2 years ago	6.2%		
	More than 2 years but not more than 3 years ago	8.2%		
	More than 3 years, but not more than 5 years ago	6.2%		
	More than 5 years ago	30.8%		
	Never have been	37.4%		
18. What type of dental care do you need now?	Teeth filled or replaced (for example, fillings, crowns, and/or bridges)	24.5%		20.0% ³
	Teeth pulled	21.2%		11.0% ³
	Gum treatment	2.4%		4.0% ³
	Denture work	32.7%		16.0% ³
	Relief of pain	3.4%		1.0% ³
	Work to improve appearance	6.3%		3.0% ³
	Other	5.3%		Less than 1% ³
	None	34.1%		59.0% ³
19. How long ago was your last visit to a dentist or dental hygienist?	6 months or less	18.3%		65.8% ¹
	More than 6 months, but not more than 1 year	10.2%		

	More than 1 year but not more than 2 years ago	14.7%		9.3% ¹
	More than 2 years, but not more than 3 years ago	28.4%		7.7% ¹
	More than 3 years, but not more than 5 years ago	9.6%		
	More than 5 years ago	17.3%		16.5% ¹
	Never have been	1.5%		0.7% ¹
Health Care Access				
20. Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or govt. plans?	Yes	89.7%		93.5% ¹
	No	8.4%		6.3% ¹
	Don't Know/Not Sure	2.0%		0.1% ¹
	Refused	0.0%		0.1% ¹
21. If yes, which type of health coverage do you have?	Medicare	40.9%		47.7% ⁸
	Medicaid	16.8%		16.64% ⁸
	Private Insurance	16.3%		50.16% ⁸
	Veteran's Administration	6.7%		5.66% ⁸
	Indian Health Service	84.6%		8.51% ⁸
	Tribal Insurance	2.9%		Not available
	Other	4.8%		6.14% ⁸
22. Do you have one person you think of as your personal doctor or health care provider?	Yes, only one	21.1%		79.8% ¹
	More than one	30.2%		11.2% ¹
	No	42.7%		8.8% ¹
	Don't know/Not Sure	5.0%		0.1% ¹
	Refused	1.0%		0.1% ¹
23. When you are sick or need advice about your health, to which one of the following places do you usually go?	A doctor's office	17.7%		84.3% ¹
	A public health clinic (IHS or tribal) or comm. health center	64.0%		5.0% ¹
	A hospital outpatient department	0.6%		2.5% ¹
	A hospital emergency room	9.1%		2.9% ¹
	Urgent care center	0.0%		0.9% ¹
	Some other kind of place	0.0%		1.9% ¹
	No usual place	8.6%		2.5% ¹
24. Was there a time in the past 12 months when you needed medical care, but could not get it?	Yes	13.8%		3.8% ¹
	No	86.2%		96.2% ¹
25. What is the main reason you did not get medical care?	Cost	2.9%		46.0% ¹
	Distance	2.9%		2.8% ¹
	Office wasn't open when I could get there	2.4%		6.7% ¹
	Too long a wait for appointment	4.8%		13.8% ¹
	Too long a wait in waiting room	4.3%		3.5% ¹
	No child care	0.0%		0.1% ¹
	No transportation	4.8%		0.6% ¹
	No access for people with disabilities	0.0%		24.8% ¹

	The medical provider didn't speak my language	0.0%		1.4% ¹
	Other	3.4%		0.2% ¹
Tobacco & Alcohol Usage				
26. Do you smoke cigarettes now?	Yes, everyday	32.3%		23.0% ¹
	Yes, some days (ceremonial/social)	10.4%		5.0% ¹
	No	57.2%		72.0% ¹
27. How many cigarettes do you smoke a day? (Please enter the number of cigarettes)	1-5 cigarettes/day	27.0%		14.0% ⁴
	6-10 cigarettes/day	43.2%		25.0% ⁴
	11-20 cigarettes/day	21.6%		41.0% ⁴
	21-30 cigarettes/day	2.7%		10.0% ⁴
	31 or more per day	5.4%		10.0% ⁴
28. Do you use chewing tobacco or snuff?	Yes	2.0%		17.0% ¹
	No	98.0%		83.0% ¹

29. How many containers of snuff or chewing tobacco per week do you use?	1 container or less	25.0%		44.0% ³
	2 containers	0.0%		19.0% ³
	3 or more containers	75.0%		37.0% ³
30. The next few questions are about drinks of alcoholic beverages. By a "drink", we mean a can or bottle of beer, a glass of wine or a wine cooler, a shot of liquor, or a mixed drink with liquor in it. How long has it been since you last drank an alcoholic beverage?	Within the past 30 days	18.9%		49.5% ⁵
	More than 30 days ago but within the past 12 months	10.0%		14.6% ⁵
	More than 12 months ago but within the past 3 years	8.4%		5.8% ⁵
	More than 3 years ago	53.7%		29.7% ⁵
	I have never had an alcoholic drink in my life	8.9%		0.4% ⁵
31. During the past 30 days, on how many days did you have five or more drinks on the same occasion? (By "occasion" we mean at the same time or within a couple of hours of each other).	None	83.4%		92.5% ⁵
	1 or 2 days	9.4%		3.7% ⁵
	3 to 5 days	3.3%		1.9% ⁵
	6 or more	3.9%		1.9% ⁵

Weight and Nutrition

32. How tall are you without shoes?	The height & weight questions were used in a formula to determine the Body Mass Index (BMI) of individuals interviewed.			
33. How much do you weigh today?				
We have inserted this column to give the present Body Mass Index (BMI) of your tribal elders. The formula is currently being used by NHANES to show the relationship between height and weight.	Low/normal weight	16.3%		37.6% ¹
	Overweight	30.1%		39.8% ¹
	Obese	53.6%		22.6% ¹

34. In the past 12 months, has a doctor, nurse, or other health professional given you advice about your weight?	Yes, to lose weight	15.5%		15.1% ¹
	Yes, to gain weight	2.1%		1.9% ¹
	No	82.4%		83.0% ¹
35. Are you presently trying to lose or gain weight?	Yes, trying to lose weight	34.2%		40.7% ¹
	Yes, trying to gain weight	3.0%		Not Available
	No, my weight is OK	62.8%		59.3% ¹
36. Please mark all that apply to your nutritional health.	I have an illness or condition that made me change the kind and/or amount of food I eat.	30.8%		Not Available
	I eat fewer than 2 meals per day.	19.7%		
	I eat few fruits or vegetables or milk products.	39.9%		
	I have 3 or more drinks of beer, liquor, or wine almost every day.	2.4%		
	I have tooth or mouth problems that make it hard for me to eat.	17.3%		
36. Cont.	I don't always have enough money to buy the food I need.	24.0%		Not Available
	I eat alone most of the time	22.1%		
	I take 3 or more different prescribed or OTC drugs a day.	35.1%		
	Without wanting to, I have lost or gained 10 pounds in the last 6 months.	9.1%		
	I am not always physically able to shop, cook and/or feed myself.	15.4%		
Exercise				
37. Over the past 30 days, what vigorous exercises did you do?	Aerobics	1.0%		0.7% ²
	Bicycling	0.5%		2.2% ²
	Bicycling on a stationary bike	1.4%		Not Available
	Gardening	5.3%		1.1% ²
	Jogging	1.0%		0.5% ²
	Jogging on a treadmill	0.5%		Not Available
	Running	0.5%		0.9% ²
	Running on a treadmill	0.5%		Not Available
	Walking	55.3%		4.8% ²
	Walking on a treadmill	5.3%		Not Available
	Swimming	1.0%		0.2% ²
	Weight lifting	3.8%		0.6% ²
	Yard Work	25.0%		2.8% ²
Traditional Pow-wow dancing	4.8%		1.6% ²	
Social Support/Housing				
38. How often do you attend church, sweats, ceremonies, or religious services?	None	48.8%		53.0% ³
	Once per week	37.7%		36.0% ³
	Twice or more per week	13.6%		11.0% ³
39. How many clubs or	None	53.6%		65.0% ³

organizations such as church groups, community boards, or school groups do you belong to?	1	32.0%		21.0% ³
	2	9.2%		9.0% ³
	3	2.0%		27.0% ³
	4	0.7%		17.0% ³
	5 or more	2.6%		26.0% ³
40. How often do you attend meetings of the clubs or organizations you belong to?	None	60.1%		90.9% ³
	Once per week	30.1%		4.4% ³
	2 or more times per week	9.8%		4.7% ³
41. How long have you lived at your present address?	Whole life	25.6%		Not Available
	21 years & over	31.7%		42.9% ³
	11-20 years	11.1%		21.8% ³
	5-10 years	13.1%		15.5% ³
	3-4 years	4.0%		7.0% ³
	1-2 years	8.0%		7.2% ³
	Less than 1 year	6.5%		5.6% ³
42. What type of housing do you presently have?	Single family residence	83.6%		86.2% ⁷
	An apartment	11.8%		3.9% ⁷
	Sleeping room, boarding house	0.0%		0.6% ⁴
42. cont.	Retirement home	0.5%		1.9% ⁴
	A health facility	0.0%		2.1% ⁴
	Other	4.1%		5.3% ⁴
43. Are you living with family members, non-family members, or alone?	With family members	78.1%		Not Available
	With non-family members	0.0%		
	Both family/non-family members	2.6%		
	Alone	19.4%		
44. How many (including yourself) live in your household?	Enter number in household	Avg. = 3.25	Aggregate (55 and over) Avg. =	National Data (55 and over) Avg=1.76 ¹
45. Do you have a family member who cares for you?	Yes	45.7%		Not Available
	No	54.3%		
46. Do you take care of grandchildren?	Yes	47.8%		1.9% ⁶
	No	52.2%		98.1% ⁶
47. Which of the following services are now available in your community? (Please mark all that apply)	Dietary and nutritional services	33.7%		Not Available
	Meals on wheels	85.6%		
	Transportation	63.0%		
	Occupational/vocational therapy	9.1%		
	Speech/audiology therapy	3.4%		
	Respite care (temporary)	2.9%		
	Personal care (e.g. bathing)	5.3%		
	Skilled nursing services	27.4%		
	Physician services	28.4%		
	Social services	43.3%		
	Physical therapy	14.4%		
	Home health services	23.1%		
	Adult day care	1.0%		
	Assisted living (apt. here personal care services are available)	1.0%		

	Nursing Home	4.8%			
	Other services	4.3%			
		Now Using	Would Use	Now Using	Would Use
48. Are you now using, or if at some point you became unable to meet your own needs, would you be willing to use the following services? (Please mark all that apply)	Dietary and nutritional services	4.3%	28.8%		
	Meals on wheels	38.9%	38.5%		
	Transportation	11.1%	49.0%		
	Occupational/vocational therapy	0.5%	24.5%		
	Speech/audiology therapy	0.0%	21.2%		
	Respite care (temporary)	0.0%	22.6%		
	Personal care (e.g. bathing)	1.0%	26.4%		
	Skilled nursing services	12.0%	31.3%		
	Physician services	15.9%	27.9%		
	Social services	1.4%	26.0%		
	Physical therapy	2.4%	29.8%		
	Home health services	8.2%	34.1%		
	Adult day care	0.0%	16.8%		
	Assisted living	0.0%	38.9%		
	Nursing home	0.0%	32.2%		
Other services	0.5%	13.5%			

Not Available

49. Have you been employed full or part-time during the past 12 months?	Yes	46.8%		31.3% ¹
	No	53.2%		68.7% ¹
50. If No: What were the main reasons you did not work in the past 12 months?	Retired	47.9%		49.5% ²
	Ill, disabled	33.3%		33.1% ²
	Taking care of home or family	5.2%		13.3% ²
	Unable to find work	4.2%		1.0% ²
	Doing something else	9.4%		3.1% ²

Demographics

51. Sex	Male	43.4%		37.5% ¹
	Female	56.6%		62.5% ¹
52. Age	55 to 59 years	34.3%		22.8% ¹
	60 to 69 years	44.3%		35.6% ¹
	70 to 79 years	17.4%		28.4% ¹
	80 and over	4.0%		13.2% ¹
53. Current marital status	Married or living with partner	38.5%		52.7% ¹
	Single, never married	14.0%		4.3% ¹
	Divorced or separated	19.5%		15.2% ¹
	Widowed	28.0%		27.8% ¹
54. What is your personal annual income?	Under \$5,000	20.0%		71.9% ⁶
	\$5,000 - \$6,999	15.1%		1.6% ⁶
	\$7,000 - \$9,999	14.6%		2.2% ⁶
	\$10,000 - \$14,999	13.5%		3.5% ⁶
	\$15,000 - \$19,999	16.2%		3.0% ⁶
	\$20,000 - \$24,999	9.2%		2.8% ⁶
	\$25,000 - \$34,999	7.0%		4.5% ⁶
	\$35,000 - \$49,999	4.3%		4.3% ⁶

	\$50,000 or more	0.0%		6.2% ⁶
55. What is the highest grade or year of regular school you have completed?	Never attended/kindergarten only	0.5%		0.3% ¹
	Elementary 12345678	22.3%		7.6% ¹
	High School 9 10 11 12	52.5%		44.3% ¹
	College 12345 +	22.3%		47.5% ¹
	Graduate School	2.5%		
	Refused	0.0%		0.3% ¹
56. What county and zip code do you currently reside?	Enter County and Zip Code			
57. Are you Alaskan Native, Native American, Native Hawaiian, or other?	Alaskan Native	0.5%		Not Available
	Native American	97.5%		
	Native Hawaiian	2.0%		
	Other	0.0%		
58. Do you reside on a reservation, trust land, or in an Indian Community?	Yes	90.7%		Not Available
	No	9.3%		
59. If yes, how long have you lived on a reservation, trust land, or in an Indian Community.	All my life	74.2%		Not Available
	50 years or more	6.5%		
	30 to 49 years	13.4%		
	10 to 29 years	4.3%		
	Less than 10 years	1.6%		
60. Enrolled member of a federally recognized tribe?	Yes	95.7%		Not Available
	No	4.3%		
61. Have you ever served on active duty in the U.S. Armed Forces, military Reserves, or National Guard?	Yes, now on active duty	1.0%		0.1% ⁶
	Yes, on active duty during the last 12 months, but not now	0.0%		0.1% ⁶
	Yes, on active duty in the past, but not during the past 12 months	13.3%		24.8% ⁶
	No training for Reserves or National Guard only	1.0%		2.9% ⁶
	No, never served in the military (skip to end)	84.7%		72.2% ⁶
62. When did you serve on active duty in the U.S. Armed forces? (Mark each period in which you served)	September 2001 or later	0.0%		0.5% ⁶
	August 1990 to August 2001 (including Persian Gulf War)	0.5%		1.0% ⁶
	September 1980 to July 1990	0.0%		2.8% ⁶
	May 1975 to August 1980	0.0%		4.6% ⁶
	Vietnam Era (August 1964 – April 1975)	6.3%		31.5% ⁶
	March 1961 to July 1964	0.0%		16.6% ⁶
	February 1955 to February 1961	2.9%		20.6% ⁶
	Korean War (July 1950 – January 1955)	4.3%		24.2% ⁶
	January 1947 to June 1950	1.0%		5.1% ⁶
	World War II (December 1941 – December 1946)	1.0%		27.5% ⁶

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